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BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

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THERE may be a science of costing, of transportation, and of operation, but there can be no science of co-operation. That is dependent not on scientific principles but on ethical principles. It is a question of ideals, not of systems. It must always remain a problem of mentality and of the spirit. Page 211.

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AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

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COMMENT

I THINK your Society is doing better work on administrative problems than any other society in the world.

These strong words came, unsolicited and unexpected, from the chief executive of a world-known European firm. The Taylor Society has been very conservative in reporting the good things which have been said about its work; therefore, it feels that it can with propriety, as the seasonable gift to its body of loyal members, report a good opinion which indicates that a competent judge believes it to be on the way to accomplishing that which is its greatest ambition.

THE most important item of news in this issue is to be found on page 245. There will be found the announcement of the program of the next meeting of the Society, to be held in the Engineering Societies Building, 29 West Thirty-ninth Street, New York; January 24-26, 1924. As the announcement indicates, it is a program with a purpose. The recent publication of Copley's "Frederick W. Taylor" has inspired the Society to arrange a program which will take an inventory of the present state of scientific management. The papers and discussions of that meeting should find a place among the management classics.

SOME weeks ago we sent to one of our English members—Mr. Oliver Sheldon, of Rowntree & Company—for his comment, a short article by Herbert N. Casson entitled "Scientfic Management Unknown in Great Britain," which we had clipped from the Philadelphia *Public Ledger*. The article on page 209 of this issue is Mr. Sheldon's response. We consider it one of the most substantial papers which it has been the privilege of the BULLETIN to present to its readers. The discipline of Oxford, the perspective of detachment from the scene of scientific management controversy, and the practicality of an executive in contact with administrative problems show clearly in it. Mr. Sheldon's mind penetrates directly to the fundamental questions raised by Mr. Casson's article.

IT IS a good thing for our American readers to have Mr. Sheldon begin by asking what we mean when we speak of scientific management, and to recall to our minds what Taylor himself said specifically it *does* mean and *does not* mean. Many of us have fallen into the habit of emphasizing mechanism and details, and of forgetting spirit, mental attitude and principles. Scientific management, said Taylor, "is none of the ordinary devices which unfortunately are going by the name of scientific management." It "fundamentally consists of . . . a certain philosophy which can be applied in many ways . . ." As Mr. Sheldon puts it, "scientific management, then, is the conduct of the work of management according to the scientific method—investigation, classification, definition, measurement and standardization."

PARTICULARLY interesting is Mr. Sheldon's analysis of the distinction between scientific management and the science of management. Scientific management is the utilization of the scientific method of solving the problems of the conduct of enterprise—an instrument of management. The use of this instrument results in varieties of codified knowledge—the sciences of laying bricks, of covering chocolates, of shoveling, of cutting a garment. These are what he calls operative sciences. These sciences are discovered for and taught to operatives by management. But there is the task of management itself, distinct from the tasks of those whom the management controls. By the use of its own instrument—scientific management, the scientific method in management—management can discover and codify the science of performing its own task. That is the science *of* management. "It is, as we know, just as possible to have standard methods of engaging employees, of compiling plans or of routing orders, as of laying bricks—and these constitute the essential science of management. I submit, therefore, that the management has the dual task of formulating a science for every branch of operative work it controls and of formulating a science, by the same methods for every branch —direct and indirect—of that control. . . . scientific management, therefore, knows no limits . ."

"THERE may be a science of costing, of transportation, and of operation, but there can be no science of cooperation. That is dependent not on scientific principles but on ethical principles. It is a question of ideals, not of systems. It must always remain a problem of mentality and of the spirit." This generalization of Mr. Sheldon will receive the approval of every reader of his article. But it has a corollary verified by American experience. Where scientific management governs management, where management and operatives submit to the rule of law instead of tradition, prejudice, whim and autocracy—there is created an environment which inspires the mentality and the spirit which makes true cooperation possible.

INDUSTRIAL STATESMANSHIP

COMPARISON of the resolutions and declarations of manufacturers', bankers', labor and other organized industrial associations, raises the interesting and important question whether labor is not at present showing more genuine statesmanship—insofar as is manifest by declarations of policy—than is any of the other groups.

There is occasion for grave concern that the declarations of organized bodies representative of finance, ownership and management are as a rule limited to generalization such as "less government in business and more business in government," without supporting studies showing why more government in business has come about and how less government in business is to be achieved. There seems to be an absence of historical sense of the reasons for the present situation and of constructive imagination with respect to the way out. There is apparently little concern on the part of ownership and management that the way business has been managed—with respect to controlling motives and practice—is probably the cause of the situation which business feels to be so unsatisfactory, and that the remedy undoubtedly lies in the way business is going to be conducted—again with respect to controlling motives and practice. Experiencing the ill effects of an unfavorable regimen, ownership and management disregard the proved methods of diagnosis, prognosis and prescription and cry out for a Coué to lead them to health through a formula.

On the other hand, certain recent declarations of organized labor[1] give evidence of a thinking about the reasons for the present situation and a way out. Among many declarations and resolutions adopted at the October convention of the A. F. of L. at Portland, Oregon, was one entitled "Industry's Manifest Duty." One may not agree with all in that declaration, but one must recognize its substantiality, and acknowledge that it presents basic principles of a positive program of cooperation with ownership and management. Its constructive vision is evidenced by the fact that it recognizes that the ills of industry are a result of the habits of industry, and that the cure for those ills must come from a change of habits. The following excerpts are worthy of most serious consideration:

> Henceforth the movement for the organization of the workers into trade unions has a deeper meaning than the mere organization of groups for the advancement of group interest, however vital that function may yet remain.
>
> Henceforth the organization of workers into trade unions must mean the conscious organization of one of the most vital functional elements for enlightened participation in a democracy of industry. . . .
>
> Through the muddling conflict of groups who still find it impossible to come together in cooperation we must look to a future that must have its foundation upon cooperation and collaboration. . . . We advocate organization of all wage earners and of all useful and productive elements.
>
> . . . that our national life today is becoming more and more industrial and that the decisions that most vitally affect the intimate daily lives of our people are the decisions that are made in industry, in the workshops and factories, in the mines and mills, in commercial establishments, on the railroads and in the counting rooms. . . .

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[1] *American Federationist*, November, 1923.

> For the future industry must be something of which we have a national consciousness. It must cease to be a disconnected collection of groups. . . .
>
> The functional elements in our national life must fit themselves to work out their own problems, eradicate their abuses and furnish America with an ever increasing flood of commodities, both necessary and pleasure giving. Industry alone has the competence and must demonstrate that competence through organization. . . . Industry must organize to govern itself, to impose upon itself tasks and rules to bring order into its own house. Industry must bring order to itself constructively or it will have an order thrust upon it . . . under the regime of bureaucracy that threatens unless industry solves its own problems.
>
> It is not the mission of industrial groups to clash and struggle against each other. . . . The true role of industrial groups, however, is to come together, to legislate in peace, to find the way forward in collaboration, to give of their best for the satisfaction of human needs. There must come to industry the orderly functioning that we have been able to develop in our political life.
>
> Labor stands ready for participation in this tremendous development. It has long offered conference with all its implications as a substitute for conflict, regarding the folding of arms in idleness only as the last resort in failure of negotiations. . . .
>
> Industry must save itself. Industry must find itself. Industry must organize for service, for constructive effort, for orderly continuity, for justice to all who participate . . . to that end it must organize and come together in deliberative bodies where the full wisdom and experience of all may contribute to final decisions. . . . Fact must take the place of opinion and selfish interest. . . .
>
> We commit ourselves to greater efforts in the organization of all workers, we urge upon all useful persons the imperative need of organization, and finally, the coming together in working bodies of all organizations through representatives who shall speak for organic groupings. . . .

We add the following paragraph from Mr. Gomper's remarks recommending the endorsement by the convention of the declaration from which the above excerpts are taken:

> We have an abiding faith in the ability of industry to develop and erect the methods and machinery for the solution of its own problems. We have faith in its ability to promote and secure justice. We have faith in its ability to develop and give effect to a restraint and discipline suited to its needs and the needs of humanity and to bring into operation the methods by which it may function most efficiently in the service of mankind.

In an article entitled "Industry Must Cure Itself" Mr. Gompers quotes with approval, as expressing A. F. of L. policy, the following paragraph from the report of the United States Coal Commission:

> The commission has aimed to make such proposals as will increase rather than decrease *the sense of responsibility within the industry*. A legitimate pride in workmanship, in fair practice, in operating and commercial enterprise will be developed not by taking over from industry its natural functions and placing them in the hands of the government, but by such measures as will insure public knowledge and will create public confidence that abuses are in a fair way to be removed and that service is constantly improving.

While the declarations and resolutions of the Portland convention present quite a radical departure from what has appeared to be A. F. of L. philosophy, they should be accepted at face value and organized labor congratulated on this manifestation of industrial statesmanship. Labor does not stop with the mere assertion that there is too much government interference in industry; it offers a program: There is too much government interference in industry; it is a result of the way industry is managed; it will increase if industry does not regulate itself better; let all organic elements in industry organize and through conferences of representatives take practical steps in this matter of self-regulation; it is a choice of more regulation politically from without or more regulation voluntarily within; and regulation within must be comprehensive and representative of all organic constituent elements.

There has been some experience along the lines of such a program of cooperation, and the results are such as to give weight to the A. F. of L. declaration of policy. There is probably no industry generally more chaotic than the ready-made garment industry; were its relations to the public as definite as are those of transportation and mining it would long ago have been subjected to severe regulation from without. The conditions are so chaotic as to have inspired in certain places a regulation from within through the cooperation of all organic elements. We prefer to the agreements in the Cleveland, Rochester and Chicago markets, which involve machinery for the adjustment of disputes as they arise, insurance against unemployment which creates an incentive for such a quality of management as will secure continuity of employment, standards of productivity and wage standards.

We believe the policy presented in "Industry's Manifest Duty" is of great significance to those who believe in scientific management. Such a policy offers stability of operating conditions, and it is upon the foundation of stability that efficient management must be erected. Any policy which will promote stability will promote scientific management. And stability once established through cooperation of the organic elements of an industry, better management and more efficient operating will inevitably come through the same cooperation. Organized labor has had much to say against scientific management, for it has feared abuse of its mechanisms, which Taylor acknowledged is possible. Organized cooperation would remove labor's fear of the abuse of the mechanisms, and would undoubtedly promote scientific management in accordance with its true spirit. Taylor had many controversies with organized labor, but he said as much for as against organized labor. In one of his last talks, before the Philadelphia Y. M. C. A., he referred to the difference between matters which could be settled by investigation, experiment and law, and matters which must be settled only by the concensus of group opinions. Cooperation should bring labor's assistance in settling those matters which can be settled by investigation, experiment and law, and management's assistance in the establishment of a machinery for the settlement of those matters which can be settled only by wise judgments. While we have a right to expect that the field of determination of facts by scientific methods will grow broader, should we not also expect that, as we enter upon a greater industrialism, the field of adjustment by conference and rational judgments must also grow broader?

BUSINESS TRAINING FOR MILITARY OFFICERS

About four years ago there appeared in the Bulletin[1] an editorial under the above caption. Fresh from participation in and general observation of military supply methods, we had some definite ideas on the subject. Among other things we said:

> The Taylor Society respectfully suggests that provision be made for adding to the technical training of West Point graduates, a training in business administration. . . . A course in business administration at West Point, special work at the Harvard Graduate School of Business Administration or the Tuck School, a period of service in manufacturing and merchandising concerns,—such additional training for future officers would profoundly influence the supply operations of another war.

Apparently the observations of others led to similar conclusions. For recently the information has been given out at Washington that eight army officers are to enter the Harvard Graduate School of Business Administration to take the full two-year course—two from the Quartermasters Corps, two from the Medical Corps, and one each from Ordnance, Signal Corps, Air Service, and Chemical Welfare. After completion of the course these officers will form the nucleus of a teaching staff for an army school of business.

This is a significant step in the right direction. No announcement has been made of larger plans of which it may be a part, and possibly such plans have not been definitely formulated; but an active imagination can foresee possible interesting developments. Among the various things to which this step might lead are the following:

Educational

Instruction of all students at West Point in pertinent fundamental business subjects.

A school of advanced instruction for graduates of West Point whose abilities and interests fit them especially for the supply corps of the service.

A school of instruction in pertinent fundamental business subjects for non-commissioned officers in the supply corps.

Investigational

Investigation of the resources of the United States to determine what are available for military purposes, both raw material and fabricated, including places of origin, methods of distribution, processes of fabrication, potential as well as actual supply, and the possibility of and methods of readjusting the utilization of productive and distributive facilities to the requirements of war as contrasted wth the requirements of peace.

Investigation of the best methods of organization and procedure—the best type of management—for supply bureaus of the service.

Investigation of the resources and industries and industrial facilities of other countries, as potential enemies in time of war, for the purpose of determining their economic resources for offensive operations and the sustenance of morale, and of determining the weak spots for attack along military-economic lines.

Operating Methods

The formulation of a definite basic system of supply operations for each branch of the service including standards of procedure for procurement, for production, for transportation, warehousing, and issue. Such a basic system should be so worked out, and kept up to date by changes to meet changing conditions, as to be easily and naturally expanded from the requirements of peace to the requirements of war without change in fundamentals.

The great waste of the late war was a consequence of the fact that the military establishment was not informed concerning the production and distribution resources of the country and concerning production and commercial practice; and of the fact that the business methods of the army, adapted to the relatively inactive conditions of peace, were obsolete. It is quite possible for the military establishment to keep itself informed, and to operate in times of peace in accordance with up-to-date business methods adapted to the requirements of war conditions, and in time of war capable of rapid expansion to handle the larger volume of business.

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[1] Vol. IV, No. 4, August, 1919.

THE ART OF MANAGEMENT

FROM A BRITISH POINT OF VIEW

By Oliver Sheldon[1]

IT would be both ungracious and untrue to deny that, in recent years, a very strong impulse towards more efficient industrial management has come to us in Great Britain from the United States. Fresh breezes have crossed the Atlantic, bearing new ideas and scattering old ones. Most cordially I, for one, acknowledge the service which Mr. Taylor and those of his compatriots who worked with him or have since faithfully carried out his great principles have performed to the world at large, and, after the United States, to this country in particular. Wherever manufacturing is carried on, this acknowledgment is due.

Much water has, however, flowed under the bridges since the first beginnings of the new era in management. Scientific management has now come to claim its capital S and its capital M, and has been awarded its inverted commas. With increasing study and a wider and constantly wider circle of readers, teachers, critics and experimentalists, the basic principles have become overlaid and difficult to distinguish. Much knowledge has conduced to obscure the main issues. There are so many trees that one often fails to discern the outline of the forest. There are false prophets to mislead the unwary and confuse the student. A vast enthusiasm to run has made some careless of the goal towards which they are running. The impetuosity of youth has overwhelmed the judgment of age. The quick glance of eagerness has seized upon tangible forms and not penetrated to the underlying spirit, as a man who reads the anecdotes of a book but skips over the conclusions.

Scientific management has accordingly suffered in the process, and has been, as it were, obscured beneath a mask. This applies in a greater degree the further one is from the source. Scientific management has been largely presented to this country in a distorted form. Its mechanisms have been everything; its philosophy nothing. It has come flushed with superficial enthusiasm, equipped with hidebound contrivances, glowing with ethereal promises, and pointing airily towards "short-cuts," along rosy primrose-strewn paths. It has accordingly evoked cynicism, sarcasm and the "cold shoulder." Yet beneath it all, it was patent to those who cared to pierce the spangled cloak that here lay a message of immense portent; and, even to those who scarcely paused to think, the mechanisms themselves suggested some facets of the truth. In general, however, I think one may fairly say that "Scientific Management," frilled out complete with capitals and inverted commas, accompanied by its profligate pursuer "Efficiency," similarly bedizened, has, in externals at any rate, received in this country a chilly reception.

Those who have witnessed its presentation cannot be surprised that this should be so. Day-to-day experience of industry is a fully adequate preventive against the deceptions of the industrial conjurer. Efficiency, as a term of industrial significance indicating a multitude of systems of specious appearance but of dubious value, has consequently come to be the outcast of our industrial vocabulary. The phrase "Scientific Management," though saved from a similarly degrading fate, has become one to be expressed with caution and reservations.

It is vastly important, therefore, if the great principles of scientific management are to become part of the web and woof of our industrial philosophy, that every effort should be made to tear away the glittering garments and reveal the real body which stands behind. When we speak of "scientific management," what is it that we mean? Is it a set of mechanical contrivances, like so many Meccano toys? Is it a transportable system of things, like a ready-made suit of clothes, that one dons and becomes a different being? Is it a complete and definite theory, or is it a general attitude to things? Is it something one installs, or is it a means which one employs? Is it an object to be attained, or is it an attitude of mind to which one must school oneself? I postulate these queries, not wholly in childish innocence, but rather because I am convinced that the future of scientific management in Great Britain depends upon the answer.

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[1] Organization Manager, Rowntree & Company, Ltd., York, England; author of "The Philosophy of Management."

Let me digress for a moment. On the morning of October 8th, 1923, readers of the *Public Ledger* of Philadelphia were confronted with the intriguing headline—"Scientific Management Unknown in Great Britain. Scientists know nothing of business and business men know nothing of science." To a British reader this must have conveyed the sense that one was amongst the ranks of the "great unwashed"—a grimy urchin playing in the dirty puddles of an industrial back-yard. Yet one could not but be struck by the glint of truth in an ambiguous title. After all, one said to oneself, where can one point to any unadulterated application of time-study, functional foremanship, standardization, planning, instruction cards, and task-work? Not here; not there; indeed, anywhere? Perhaps, there, just in one or two isolated instances. Truly, the gloom is darker than a moonless night of winter. Yet, for all that, one felt that there was something—some struggling hands, some forward-looking impulse of many scattered minds, some jerking, spasmodic, tense activity, hardly to be called a movement, yet eminently buoyant on the tide of progress—which gave the lie to all that the headline implied. And, after all, it resolved itself into the fundamental question—"Well, what do you mean by scientific management?"

Let us go back to the words of Mr. Taylor himself. "Scientific management," he says, "fundamentally consists of . . . a certain philosophy which can be applied in many ways, and a description of what any man or men may believe to be the best mechanism for applying these general principles should in no way be confused with the principles themselves." And again he says, "I want to tell you as briefly as I can what scientific management is. It certainly is not what most people think it to be. It is not a lot of efficiency expedients. It is not the printing and ruling of a lot of pieces of blank paper and spreading them by the ton about the country. It is not any particular system of paying men. It is none of the ordinary devices which unfortunately are going by the name of scientific management. It may in its essence be said in the present state of industry to involve a complete mental revolution, both on the part of the management and of the men."

Such statements as these indicate the breadth of vision of Mr. Taylor in a way which no amount of explanation can. They entirely rule out of court those who assess the presence or absence of scientific management by the presence or absence of certain mechanisms. Primarily, scientific management consists of a certain attitude to industrial problems. He, in fact, is an exponent of some branch of scientific management who deals with his factory problems by the scientific method. The scientific method may be described as a series of definite stages, culminating in a "law" or a "standard." The first stage is the accurate, systematic and wide examination of the facts. The basis of all science is fact, truth. The scientist collects his data from as many sources as possible, in as great an amount as he can command. Dispassionately he reviews them—singly and collectively. He then classifies his facts, groups them and re-groups them. Finally, from this accumulation of fact, he derives a principle, a law, or a standard. In order that his facts may be properly grouped and carefully weighed, he insists throughout upon exact measurement and the accurate definition of every tool he uses, be it a fact, a word or a measure. Scientific management, then, is the conduct of the work of management according to the scientific method—investigation, classification, definition, measurement and standardization.

If this conception of scientific management be correct, then it follows that it can be applied to the management of any enterprise, whether large or small, and to any section of an enterprise. The main work of Mr. Taylor was devoted to the application of this general philosophy to operative work and to the immediate supervision of operative work. But he himself fully realized the universal applicability of his principles. Indeed, the recent work of the Taylor Society on sales management and on the higher direction of a business by a chief executive are instances of the scientific method being used in fields somewhat remote from the factory floor. One is applying the scientific method whether, after exhaustive investigation, one determines the standard figures to be supplied to the chief executive or the standard output to be expected from the workman.

Before returning to our main theme, moreover, I think it is vital to distinguish between scientific management and the "Science of Management," of which we are beginning to hear so much. It is the difference between the scientific method as an instrument by which management arrives at certain standards, and the standards themselves. A science is the codified knowledge acquired as a result of the use of the scientific method. If, therefore, the management has applied the scientific method to some operative process— let us say, laying bricks or covering chocolates—the outcome is a science of bricklaying or a science of chocolate-covering, but not a science of management. It is the science, the knowledge, the truth, the standards which the bricklayer has to learn. To achieve a science of management, therefore, we have to apply the scientific method to the tasks of management as distinct from the tasks of those whom the management control. It is fundamental, I suggest, to draw a distinction between operative science (which management, of course, uses) and managerial science, where management itself is the operative. We need standard methods of control, standard managerial procedures, scientifically determined, as well as standard methods of operation. Just as we investigate operative processes, so should we investigate managerial processes. We should investigate precisely how the work of management is performed, sift it into its primary elements, and then reconstruct it into a new set of standard methods. It is, as we know, just as possible to have standard methods of engaging employees, of compiling plans or of routing orders, as of laying bricks—and these constitute the essential science of management. I submit, therefore, that the management has the dual task of formulating a science for every branch of operative work it controls and of formulating a science, by the same methods for every branch—direct and indirect —of that control. The two are, of course, interdependent. The standard methods of management will depend, to a great extent, on the standard methods of operation, as for instance, functional foremanship is a necessary outcome of the setting of operative tasks. But it is important to realize, firstly, that the scientific method is applicable to the work of operative and manager alike; secondly, that the outcome, in both cases, is a science to be learned, and thirdly, that the one science is something distinguishable from the other. Scientific management, therefore, knows no limits, and its object is not only to determine how best to perform operative tasks but also, and of greater importance, how best to control their performance and carry out the many varied activities auxiliary to that control.

It is an easy step from this line of argument to the realization that management is an art. To elaborate a science of chocolate-covering and of all the activities concerned, directly or indirectly, in the control of chocolate-covering is one thing; but to apply and make use of this fund of knowledge is quite another thing. The application of knowledge is an art, and not everyone who knows can successfully apply his knowledge. Even if, therefore, our science of management were as exact as that of law or of medicine, there would still be required the skilful exercise of human faculty, the art, of the manager. But it is clear, I suggest, that management can never be reduced in its entirety to a set of scientific laws. What Mr. Church has described as the "determinative" element in management must always be beyond all scientific standardization. It can be rendered immensely easier, by providing for it a scientific "administrative" element, but it cannot, of itself, be subjected to laws or principles. Neither can the human side of management be reduced to a science. Broadly, management is concerned in two primary elements—things, in the sense of machines, methods and systems; and men. The former is susceptible to scientific treatment, the latter is not. We may set up the most scientific standards of output, the most carefully designed organization of duties, the most elaborate system of planning, but these will be of little avail unless we have the rare human faculty of inducing men to work according to our systems and up to our standards. This is beyond all science. We may have scientific selection of men, we may have admirably devised systems of remuneration, we may establish the most just systems of rating, but when all is finished, there still remains the throb of human interest, enthusiasm, cooperation which alone can set in operation the carefully adjusted wheels of our machine. With a broad basis of tested knowledge, the manager has the means to obtain the very best results—but only, if he himself has that intangible capacity to make use of his knowledge and inspire his staff to apply it. There may be a science of costing, of transportation, and of operation, but there can be no science of cooperation. That is dependent not on scientific principles but on ethical principles. It is a question of ideals, not of systems. It must always remain a problem of mentality and of the spirit. One concludes, therefore, that valuable as is indeed the elaboration of scientific principles, laws and standards to govern the methods by which management may achieve certain ends, there must be added to this a spirit of leadership, based on a fundamental belief in the purpose of industry, and conducing to the utmost cooperation between all the various grades engaged in a common enterprise. The happy union of the two—science on the one hand and what we may call ethics on the other—is essential to the complete realization of one's dream that industrial management is one of the greatest arts which ever existed to benefit and uplift mankind.

I have very briefly emphasized and explained the two points above—the fact that the science of management is something distinguishable from the science of operative work, and the fact that management is an art, calling for leadership, cooperation and human skill as much as for a broad basis of science—because I believe that, without an understanding of these two ideas, one cannot fully appreciate the progress which the art of management is making in this country. Owing to circumstances which would take far too long to discuss in this paper—circumstances arising out of the exceptional mentality of Labor, the form in which the social consciousness has developed, and, still more fundamentally, the particular temperament of Britishers generally—the developments of recent years in industrial management have been and are still rather in the two directions indicated above than in the direction of what one may call "material" science. There is far more being done, more thought being applied to, firstly making management efficient as distinct from making the worker efficient, and secondly, the human relations of industry, than to either the application of the physical sciences to industry or the study of operative processes, as exemplified by the work of Taylor, Gilbreth and many others in America. The progressive British employer is more impressed with the fact that management is a synthetical art than with the equally true fact that it is founded on analytical study. His attention is, therefore, much more drawn to problems of higher organization on the one hand and problems of human association on the other than to the broad basis of operative efficiency on which these must be founded. One finds, therefore, much thought and experiment applied to wage systems, profit-sharing schemes, the question of unemployment, the application of Christian principles to industry, copartnership, industrial welfare, Works Councils, etc., arising from his concern in the problems of human leadership and association. One finds again considerable attention given to such questions as the relation of production to sales, the duties of the higher officials, the training of executives, the organization of control, the use of committees, etc., arising from his concern in the efficiency of his managerial organization. But one finds slow progress in the use of time-study, motion study, the application of science to materials, or the standardization of operative processes. Progress there is, of course—probably more than one hears of—but it is not moving with the same assurance in this as in other directions.

The comments of Mr. Herbert N. Casson—the writer above whose name the *Ledger* of Philadelphia inscribed such startling headlines—may perhaps appear more comprehensible in the light of what has been said. He writes:

> Naturally, the British business world is packed full of exceptions and contradictions. Everywhere you go, you will see patches and makeshifts. There is virtually no such thing in England as "scientific management" outside of half a dozen exceptional firms. . . .
>
> An Englishman rejects the scientific method, not because he fails to appreciate its advantages, but because he values still more highly the human element in his business. He does not regard his workers as automatic and never will. He will break up any scheme of improvement to make it fit a foreman or a sales manager. . . .
>
> He does not put output first. He cannot understand mass production. He persists in making exceptions that destroy the efficiency of any plan of increased production. . . .
>
> There is a spirit of give and take in Britain which many people think is carried too far in business life. . . .
>
> (The English) regard science as only one of the factors that must be considered in the solution of any practical problem. . . .

In the main, these are comments to which I can subscribe, but they do not in any way damp my belief that the art of management in Britain is on the move forward. This movement may not be just on the exact track which it is following in the United States, nor is the movement so rapid. But it is movement, growth, development of an unmistakable kind. As will be gathered, in some directions we are only just beginning, but in others I think we have, at any rate, passed more than a few milestones. Management is certainly in the midst of its "growing pains." Beneath the somewhat hard and weather-beaten skin, there is every evidence of growth. There is a reaching after new ideas, a deeper delving after facts, a more deliberate founding of policy upon scientifically won data, a closer examination of detail, a wider appreciation of costs and measurements of one kind or another, and, perhaps, most significant of all, a slowly developing search for the underlying purpose of industry—a search stimulated by the wide understanding of the need for the human milk of cooperation.

This stirring in the camp of management is singularly unobtrusive. One has to look for it; it does not force itself into the open to be seen by all. Here, we find a firm with a singularly exact costing system; there, a firm which has a carefully developed planning scheme; this firm with a successful profit-sharing scheme; that firm with an effective council system. Yesterday, there was perhaps a conference on foremanship; today, maybe, a conference on salesmanship. Here is a firm developing a carefully devised organization of its higher staff; there is a firm undertaking detailed research into processes. Quite generally, there is an increasing tendency to employ a certain proportion of university and similarly qualified men for the managerial work which, in a decade, has vastly increased in complexity.

Then, apart from the activities of individual firms, beginnings are being made on a more corporate basis. An Institute of Industrial Administration has been begun. A similar body, studying allied problems in a different sphere, is the Institute of Public Administration. The Institute of Industrial Psychology is a very flourishing body of recent growth. The British Association (contrary, I suggest, to Mr. Casson's comment that "the scientific men made no pretense of being of service to the world of trade and commerce") has established a Psychology section which is largely concerned in the industrial application of the science, in addition to its Economics section which again cannot be regarded as a sphere alien to industry. The Industrial Welfare Society has a large membership, and is becoming recognized as the headquarters of the so-called "welfare" work—a branch which administrators, I submit, cannot fail to regard as an integral part of management. A Sales Managers Association has been formed. The Industrial Fatigue Research Board is conducting research of immeasurable potentiality. Some twenty odd research associations have been set up under the Department of Scientific and Industrial Research. The London-Cambridge Economic Service is another recent venture, bringing economics into close touch with administration. Other societies indirectly helping to promote a higher standard of skill in management are the Institute of Chartered Accountants, the Institute of Cost and Works Accountants, the Chartered Institute of Secretaries and various engineering and statistical societies.

Furthermore, this activity is being reflected in the expansion of the curricula of some of our universities. The Manchester College of Technology is not only conducting research work, but is setting up an educational standard in industrial administration and the application of various sciences to industry. London University now includes business administration in its curriculum, and as a part of its economic degree. Leeds and Birmingham Universities are promoting similar study.

Again, in the development of the art of industrial management, one cannot by any means disregard the activities of such societies and bodies as the Industrial League and Council, the Labour Copartnership Association, the National Alliance of Employers and Employed and the Workers' Educational Association, to take a few prominent examples. In promoting the study of the human side of industry and of the problems relative to the place and functions of industry in our social commonwealth, such societies as these are definitely contributing to a wider basis of knowledge, an encouragement of experiments and a higher standard of managerial skill. That these activities are carried on in happy cooperation with Labor is an indication of what Labor may yet contribute to the promotion of the art of management.

All this activity, inchoate as it may appear, indicates a very real stirring in the life of industry, and, more particularly, in all that concerns its direction and management. Unconsciously almost, there is a spreading appreciation of the fact that industry is vastly more complex than it was some years ago, that the difficulties are greater, and, perhaps most of all, that Labor is a mare far more difficult to guide. Consequently, there is a corresponding appreciation, on the one hand, of the increasing need for the application of science to industry and the use of the scientific method in management, and, on the other hand, of the great human responsibility of management and the need for relating that responsibility to some dominant ideal and purpose, some code of ethics which shall be applicable wherever industry is carried on. Management is beginning to feel the intricacy of its task and the weight of its responsibilities. Slowly, with painstaking effort, by cautious experiment, and in a somewhat haphazard fashion, a new management is emerging—a management with new ideals, new methods and new personnel. The tips of its fingers peep out here and there through the old encrusted surface, breaking new ground in this direction and in that. Progress is truly slow. For those who look only for the application in practice of definite systems and recognized mechanisms, there is practically no progress at all. But for those who are prepared to look a little deeper and scan the wider horizon, for those who regard management not only as the function elaborating scientific methods and standards but also as the function charged with the high task of leadership and the pioneer in the development of our daily shifting social order, there is a stir of life which tells unmistakably of the passing of the old order. That this advance will come in conformity with the traditional British caution, use of compromise, and regard for continuity one may be certain. But of its coming, all the stars of heaven are singing, if we could but hear them.

What is lacking in this growth of our art of management is a corporate feeling. Each business is feeling its own way; each society or institute is ploughing its own lonely, rather narrow, furrow. There is little which the manager in one plant would regard as linking him in any way to the manager of another plant. There is, indeed, often enough no live appreciation of any professional bond linking together the various branches and grades of the management within the confines of one single plant. There is little articulate feeling that all who practise any part of the art of management are capable of being bound together in a common profession, based on a common technique, employing a common method, and pursuing a common purpose. That method—the scientific method—is not yet by any means being generally practised. That purpose—the common purpose of management—has not yet by any means been generally adopted. Consequently, the practitioners of management have not yet come to feel any strong and vivid corporate relationship. There is comparatively little corporate organization, therefore little corporate research or corporate literature. We lack our Taylor Society. We lack that free interchange of experience and information between individuals and businesses which, in the United States, has been carried some way and is an essential of all-round progress. We lack, further, that literature on management which forms a practical link between every reader. These will and must come—practical expressions of a corporate feeling. We have our beginnings but they are nothing more. They contribute comparatively little to the leavening of the whole. But I regard the formation of some definite corporate organization, representing the thought and mentality of management—viewed as the guiding partner in industry, welded together in a professional association as the next great step to be taken. It is high time that the dividing walls were razed to the ground, the shutters which hide us from each other, taken down, and all our experiments, experiences, information, standards, practices and plans brought together for the good of the whole. Then truly might we look to management, as a body, achieving a professional status, actuated by a corporate motive and applying to all its problems the proven methods of science.

THE old-time concept of personnel work as "putting square pegs into square holes" is entirely inadequate. Clearly there is a family resemblance between the "square peg" concept and the statement that personnel work consists of man-analysis, job-analysis and the bringing of man and job together. Man-analysis is essentially discovering the shape of the peg; job-analysis is essentially discovering the shape of the hole. The phrase "The right man in the right place" is obviously an echo of the square peg idea.

The inadequacy of the square peg concept arises from the fact that it sharply discriminates between the worker and his job and tends to regard each as a rigid, inelastic entity. Under this concept, industry's task is to bring two rigid, inelastic units together which fortunately are so shaped that they fit. The coldness and mechanicalness of this point of view is obvious; it is not surprising that it results so frequently in an impersonal jig-saw-puzzle attitude toward the problems of industrial personnel. There is no recognition here of the fact that men and jobs are changing in themselves, and plastic, yielding here and giving there to outside pressure. There is no acknowledgment of the common fact that with exposure to a square hole, a round peg (we are speaking of human pegs now) tends to become squarish; there is no appreciation that the square hole takes on a certain round appearance.

This new point of view in industrial personnel differs from the square peg concept in that it recognizes that the job exercises an influence upon the worker and, conversely, that the worker exercises an influence upon the job. . . .

This leads us to the conception of the worker-in-his-work as an entity all by itself. We do not think of the hiring of a worker as the connecting of a man with a job; it is the creation of a worker-in-his-work unit. We do not think of the release of a worker as the separation of a man from his job; it is the destruction of that particular worker-in-his-work unit.

The hiring of a new worker for the job will not reproduce the same worker-in-his-work unit; a new worker-in-his-work unit has been brought about. The transfer of the worker to another job will not reproduce it; again another new worker-in-his-work unit has been created.

Management's task is to make each and every worker-in-his-work unit as effective as possible. The achievement of this task makes it necessary to consider each worker-in-his-work unit from three different angles—from the points of view of Capacities, of Interests, and of Opportunities. (Scott and Clothier, ***Personnel Management***, **pp. 13-15.)**

THE PRESENT STATUS OF STATISTICAL RESEARCH IN THE ADMINISTRATION OF BUSINESS

By C. L. Sweeting[1] and D. K. Pfeffer[2]

IN THE recommendations of the Committee on Unemployment and Business Cycles of President Harding's Conference on Unemployment it is advised that "we need further development of special research into economic forces, into business currents, and into broad questions of economic method. Industries generally recognize the need of research in physical science. Laboratories have been equipped with large staffs of trained workers. A similar recognition of the importance of economic research and the interpretation of economic facts would be the beginning of better control of business conditions by business men."

The writers have attempted to ascertain the extent to which precise statistical procedures are being used as aids in the stabilization of business. Our primary purpose was to provide the most needful context for our courses in business statistics in order that our students might be prepared to serve the real demands of present day business. It was felt in addition that the spread of information as to the possible uses of statistics might encourage statistical investigation and assist the carrying into effect of the foregoing recommendation.

With the sanction and support of the College of Business Administration of Syracuse University where we were then engaged, a questionnaire (p. 217) was sent to five hundred business concerns in the United States and Canada. Of these one hundred and eighty were submitted by the Taylor Society to its members. The other companies were chosen on the basis of large capitalization and volume of business, since it was believed that these "big businesses" are the most likely field for statistical research and would naturally be the first to adopt a program of statistical coordination such as our questionnaire suggested.

The difficulties in formulating any questionnaire to be answered by executives in various fields and types of business are, of course, obvious. No single statistical program would be appropriate to a wide range of activities. The questions in the form used are most applicable to manufacturing and least pertinent to the extractive industries and wholesale trade. Accordingly our results do not show how profitable research activities are found in the latter types of industry.

The second difficulty was in the framing of questions so that they would have a precise and definite meaning and at the same time would not be expressed in language too involved and too technical to convey meaning to the executives who received them. That we did not meet this difficulty is obvious. The numerous reactions by letter evidenced that many questions were too broad to permit of unqualified answers. On the other hand, in an endeavor to be precise, we frequently used terms new in the experience of the most successful business man. While only one executive asked for the loan of a statistician, many others may have refrained from answering because they did not fully understand the questions. One reply was qualified in an accompanying letter: "Whether or not my answers are correct depends on just what one considers 'mathematical and statistical method.' While I might consider that we did use mathematical and statistical methods I can conceive of some experts differing with me." Here is a difficulty that must be remembered in considering the tabulation of replies.

In all sincerity we must acknowledge the willingness of the successful business man to cooperate with the too often bothersome academician. A fair number of nearly complete answers were returned (about 15 per cent) with several very encouraging letters from executives fully appreciative of an effort to plan a practical business course in business statistics.

Many business men religiously guard the "secrets of the business" and are at once suspicious of any questions on methods. The makers of this questionnaire respected such carefulness, and believe that unqualified answers reveal nothing that could be used by competitors. Evidently the few who answered that it was not customary to give out information regarding their business methods or practices did not "read the questions"; some of these same objectors further proved their business acumen by inclosing catalogues and even samples of their products.

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The surprising feature of the tabulated replies is that so many are affirmative. Scientific management has, to the representative executive of modern industry, come to include the study and interpretation of statistical evidence. To be sure, there are a few adherents to the old faith in executive judgment, who "would go crazy if they had to follow up and consider all the statistical studies suggested." We respect these men for their success, and we agree with them that statistical methods cannot substitute for less scientific but more experienced decisions.

The returns, as should be expected, show that the nature of the business determines the relative importance of the different statistics. The number of answers received from the extractive industries[1] is too few to make the conclusions more than tentative. Apparently statistics of labor and of purchases, and the least complex sales statistics are useful to these industries; statistics of overhead charges, credit, and financing are considered as relatively unimportant.

Mercantile business,[1] including chain stores and wholesalers, usually has no production problem, and so labor statistics are not so important. Statistics are used in guiding purchases; overhead may be an important expense factor, but apparently is mathematically reckoned by less than half the mercantile companies replying. Sales, advertising, demand, and credit are all very important.

The division of manufacturing businesses, for which the questionnaire was primarily prepared, into "cyclical" and "stable" was made in an attempt to form a separate group of those who from the character of their products would be most directly and impressively affected by the business cycle and hence would find the need for cyclic statistics more urgent and the procedures most helpful. Our figures (opposite) show that a larger fraction of this group employs statistical services and that the ratio of affirmative to negative responses is higher than in the stable group or than in the total. Even this does not tell the whole story since the percentage of replies was largest in the case of manufacturing concerns whose business could be considered cyclical.

The totals of the affirmative and negative answers for the questionnaires completely filled out are most significant, indicating the attitude of business in general toward scientific statistical work in connection with management. Under the head of Labor, business men are most interested in finding whether or not an increase in production has been accompanied by a proportionate increase in labor force. The remarkable vote in this division is on the determination of wage rates in accordance with the cost of living. Less than one-third make any such calculation, and some of these pioneers admit half-hearted methods. "Very many businesses are today watching the cost of living index, both United States and National Industrial Conference Board, watching and using, but not varying wage rates directly with the change in cost of living." This may be due to unionization or to the impracticability of the method. At any rate, the answers should be suggestive to the executive who believes that everything possible has been tried to meet the wage demands of labor.

The purchasing department is well established in big business but the possibilities of statistical guides in purchasing apparently have not been so generally recognized as would be expected. Few agents use mathematical correlation; possibly graphic comparison is more satisfactory. Probably the devise of correlation will be more appreciated when it is better known. Sales management more frequently employs mathematical and statistical methods of direction.

Advertising gets a vote of confidence; yet only sixteen of seventy-three firms set aside during easy sale periods a surplus for advertising when sales resistance is greater. It would seem to an observer, at least, that such a policy would be very sound and profitable. Moreover, it is quite astonishing to learn that one firm in two, of those replying, "employs statistical methods or standards to measure the efficiency of particular media for given periods." This question was checked by a letter addressed to some of the principal advertising men in the East and Middle West. No one of them claimed to have developed any such exact test of media as this question indicates, and most of them frankly doubted the practicability of any such procedure. Their doubt is here refuted by the testimony of

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[1] Ten scattered replies were received from questionnaires sent to mercantile concerns and extractive industries. These are not detailed in the table (Fig. 1) but are included in the totals given.

QUESTIONNAIRE: THE USE OF STATISTICS IN BUSINESS

	ANALYSIS OF REPLIES					
	TOTALS		MANUFACTURING			
			Cyclical		Stable	
	Yes	No	Yes	No	Yes	No
I. PRODUCTION.						
A. LABOR.						
1. Do you employ mathematical and statistical methods to determine:						
a. Whether or not an increase in production has been accompanied by a proportionate increase in labor force?	61	15	41	9	11	5
b. The effect of overtime on the ratio of output to labor volume and to unit production costs?	35	41	24	26	6	10
c. The relative efficiency of labor in various stages of the business cycle?	37	39	26	24	6	10
d. The amount and expense of labor turnover?	46	30	32	18	8	8
e. The proper balance of labor force and a given plant equipment?	41	35	30	20	6	10
f. The relation between deviation from this balance and the rate of profit?	26	50	18	32	6	10
g. Future wage rates in accordance with the trend of the cost of living as shown by an index such as the Department of Labor compiles?	23	53	17	33	2	14
B. PURCHASES.						
1. Do you use mathematical and statistical methods to determine:						
a. The most profitable time to buy in excess of current requirements, for future production?	45	31	28	22	10	6
b. The time when buying should be for minimum stock requirements?	46	30	29	21	10	6
NOTE: If your answer to the preceding questions is "Yes," do you use mathematical methods of correlation?	18	56	12	38	3	11
C. OVERHEAD.						
1. Do you use mathematical and statistical methods to determine:						
a. Whether changes in overhead, or burden, ratio have been due to changes in operating efficiency or to changes in external conditions?	42	34	33	17	5	11
b. The relation of overhead charges to the business cycle; the extent to which overhead increases or decreases in the different phases of the cycle?	32	44	24	26	5	11
c. The effect of overtime on burden ratio to judge expediency of accepting orders that necessitate overtime?	31	45	25	25	3	13
d. Possibilities of increasing rate of turnover of materials? (By use of a control board, for instance?)	46	30	35	15	8	8
II. MARKETING.						
A. SALES.						
1. Do you use mathematical and statistical methods:						
a. To provide knowledge of secular trend (or the growth factor) in sales of each line of goods?	52	24	36	14	8	8
b. To find seasonal fluctuations or monthly relatives in sales volume, to predict future probable sales for any particular month?	56	20	40	10	9	7
c. To find relation of sales volume to sales costs at varying seasons and phases of the business cycle?	47	29	31	19	10	6
d. To forecast the probable demand for your products?	50	26	32	18	11	5
B. ADVERTISING.						
1. Do you consider advertising a large force in the creation of demand for your product?	52	24	32	18	12	4
2. Do you employ statistical methods or standards to measure the efficiency of particular media for given periods?	34	42	22	28	7	9
3. Do you set aside during prosperous years a reserve for advertising purposes during slump periods?	16	60	11	39	2	14
C. DEMAND.						
1. Do you employ charts showing the course of:						
a. Monthly sales?	64	12	44	6	12	4
b. The price of your product?	48	28	32	18	10	6
c. The physical volume of business?	58	18	40	10	11	5
d. The consumer's purchasing power?	20	56	14	36	2	14
e. The future trend of your business?	37	36	23	27	8	8
2. If you do use such charts, does your planning department use appropriate mathematical methods when calculating the estimates to allow for:						
a. Secular trend or growth factor?	26	50	18	32	4	12
b. Seasonal variation?	37	39	26	24	6	10
c. Cyclical factors?	27	49	19	31	4	12
3. Do you use the turnover of bank deposits as an index of buyers' purchasing power?	16	60	10	40	2	14
D. CREDIT.						
1. Do you correlate the credit losses of your business with the stages of the business cycle, in order to adjust your credit standards to changing hazards?	29	49	16	33	6	10
III. FINANCE.						
1. In marketing your securities do you use statistical methods of determining how far needs should be anticipated in order to take advantage of periods of low interest rate?	15	60	8	42	4	11
2. In presenting the financial condition of your company to your bankers, do you use statistical tables and charts showing ratios, trends, and seasonal variations, as supplementary evidence of conditions and prospects?	16	59	11	39	3	12
IV. ADMINISTRATION (PLANT EXPANSION).						
1. Do you prepare plans for future expansion based on the projection of the secular trend (growth) line of your business?	25	50	17	33	4	11
2. Do you control your building program by reference to statistics showing the deviation of building costs from the trend?	14	61	9	41	2	14
NOTE: If your answer is "Yes," do you use standard deviation *or* average deviation as measuring the limits which alter your policy? Please designate which measure is used	Average deviation preferred					
Is there some one in your organization who acts as an economist or statistician?	37	38	27	23	6	9

thirty-three going concerns who actually do have means of determining the relative efficiency of advertising media.

Consumers' purchasing power is of first importance as a sales volume determinant; few concerns claim any mathematical methods of following it. Here is a field for statistical experimentation. The turnover of bank deposits is definitely discredited as a single index of buyers' purchasing power.

Although there were no banking houses on the mailing list, a number of firms follow the cautious practice of adjusting credit standards to changing hazards; credit losses do vary with the stages of the business cycle.

The procedures under Finance and Administration, if they would be of value to business men, are almost unknown to those represented in the replies. Several men answered to the questions under Finance: "No financial problems"; their position is most enviable but hardly universal in the business world.

The percentage of firms supporting an economist and statistician must be further reduced. A few answering affirmatively noted that the economist was not yet devoting his full time to the work described in the questionnaire. Two or three companies employing statisticians are doing almost no statistical work as contrasted to others without the services of an expert. "Doubtless in most large businesses many different individuals act as both economist and statisticians, and yet perhaps no one person is assigned to be the economist or statistician."

One of the most interesting things shown by the replies was that where the statistical procedure required was relatively simple it was used extensively but where the work required was so complex as to demand the specialized training in statistics, the procedure was not used. The writers are inclined to believe that the lines of inquiry which are relatively neglected are quite as significant and inexpensive as the ones more generally stressed, and that many concerns would aid the coordination of the various departments of their business and improve their adjustment to the changing industrial environment if they added to their organizations an individual thoroughly trained in modern statistical methodology.

It should be emphasized that the outspoken criticism of the questionnaire was almost wholly favorable to the business methods suggested. Successful men are spending, and are willing to spend more, in adopting these comparatively untried aids to scientific management. There is opportunity for the expert capable of making complex statistical studies. Criticism not unreservedly laudatory was for the most part only cautionary. This can best be presented by quotation:

> While the writer is heartily in sympathy with the spirit of all that is being done to ascertain the basic laws of business, he feels that it may be overdone. Compilations of statistics may lead to certain conclusions, and yet these conclusions cannot be accepted because simple principles of trading or competitive conditions may prevent. . . . The fact remains that unscientific competition exists, particularly many little fellows in business, who do not know their costs, and for that matter many big fellows, too. . . . An understanding of the science of business is, of course, valuable as is technical knowledge to the engineer.
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> To my mind, educational institutions do not lay sufficient emphasis on the necessity of preparation for fine cost accounting in the training of business research students. External studies of markets, business cycles, and all sorts of conditions fall short of requirements if the research man cannot link them up scientifically with the internal facts of the business; he cannot depend on the accounting department to furnish complete internal data, for no accounting system provides for all the needs of a competent research department.
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> It is my opinion that there is a considerable field for the kind of work you outline, but I feel that perhaps the greatest service is to inculcate into the young business man how to get up his own report which will particularly apply to his business, using all the many sources available to him.

Those who have a professional interest in the field of business research may be interested to know that four concerns whom the writers had regarded as having made the most progress in this sort of record keeping management, modestly stated that they had as yet only scratched the surface of possibility of business control through statistical guidance.

Scientific management now embraces an expert use of statistics—tabulated experience—and of statistical devices. The use of statistics to guide executive judgment cannot justly be branded "speculative"; rather it is tending to lessen the importance of chance in business success. And in so far as statistical research illuminates the dynamics of business, intelligent provisions can be made for some stabilization of the affairs of the concerns utilizing such service. It is through individual stabilization that the "wobbly business environment" may be steadied, and the business cycle curve partially ironed out.

THE FUTILITY OF LOCKOUTS AND STRIKES

By Paul Ogilvie, Ottawa, Canada

OWING to the needs and lessons of the war, a wave of interest and research has carried thought and knowledge very rapidly forward in consideration of the human factor. This interest is properly divided into two headings: (1) the physical conditions under which men work; and (2) remuneration, and settlement of disputes. It is the settlement of disputes with which this paper deals.[1] It has been found that the difficulty with the settlement of industrial disputes by arbitration or permanent court is that there is no way of enforcing the findings; consequently this system of settlement of disputes has eventually broken down, usually with a reversion to the age-old system of lockout and strike. Just how effective this system has proven to be will be the subject of our interest.

The question of the usefulness of the lockout and strike is difficult to answer because the view is generally held that they have been and are of service and that practical results are obtained. Thus, in a recent book purporting to be a textbook on Capital and Labor, it is said:

> Discontent, expressed in constant agitation, has, unfortunately, been of practical value—that is one reason why it is so rife in industry today. No substantial increase in wages or improvements in working conditions have, in the past, been conceded voluntarily by employers, but only after pressure by the unions subject, of course, to considerable qualification in special cases. It is more or less inevitable that it should be so, having regard to the way in which the machinery of collective bargaining has been operated by both sides. Every time, when an increase of wages or an improvement in conditions is demanded and refused and then ultimately given under threat of a strike, it feeds the springs of future discontent and confirms in the workers' minds the efficacy of agitation.

The foregoing rather sweeping statement is not supported by the citation of concrete examples, nor is it mentioned whether the alleged "practical value" has been maintained, or has been an equivalent for the loss, distress and hindrance caused by lockouts and strikes to the well-being of the parties concerned, whether they care or not for the interests of other industries and persons affected by their action. On the other hand, the sixty members of the Provincial Joint Committee constituted from employers and the principal trade unions, after an industrial conference in February, 1919, recorded their opinion that "Employers' organizations and trade unions should enter into negotiations for the establishment of machinery or the revision of the machinery *for the avoidance of disputes.*" Various other pronouncements might be cited indicating that it is not every leader of organized unions who desires to attach "practical value" to such disputes.

Although lockouts and strikes go back to Biblical times, it was not until 1825, with the repeal of the Combination Laws, that the rights of collective bargaining and the power of withholding labor by concerted action was obtained, not by reason of, but rather in spite or strikes. On the other hand, the coal miners of Northumberland and Durham tried two years of rioting and strikes leading to the use of troops, with the result that trade unionism scarcely survived after the signal failure of strike upon strike. A generation later, the Blackburn and other cotton lists on which the gradual evolution of the basic piece-work rates of the cotton trades is founded, were obtained by careful and patient work, and gradual proof of value. No strikes could settle such complicated details. The success of the methods then employed led to "Councils of Conciliation" in other trades, and offered contrast to the complete defeat of the engineers about the same time. The engineers were locked out in answer to a concerted threat of immediate action for the abolition of piece-work and systematic overtime. As in anticipation of the sudden strike of 1911, they proposed general action upon matters involving many qualifications and adjustments capable only of settlement by close examination of detail. In the result they failed entirely.

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[1] The writer is indebted for material and inspiration to Lord Askwith, Comptroller General of the Commercial Labour Statistical Department of the Board of Trade and subsequently Chief Industrial Commissioner, and particularly to his lecture before the Royal Society of Arts, of whose Council he was chairman, at the November 1922 meeting in London.

In the winter of 1859, there was a great dispute in the London building trade. A nine-hour day was demanded, and the employers in answer tried to impose a document of renunciation of the Union. They went too far and had to withdraw, but the men did not gain the nine-hour day. In this dispute efforts upon both sides were wasted. In 1867, after a succession of petty strikes and lockouts, the Government appointed a Royal Commission, the leaders of the Trade Unions joining in the demand for an inquiry. Nobody had gained anything by these years of quarrel.

It may be possible that these lockouts and strikes caused Parliament to deal with the difficulties by which the public were affected. Lord Askwith's view is that the source of inquiry and the legislation of the years between 1867 and 1876, (including laws such as the Conspiracy and Protection of Property Act of 1875, and the Employers and Workmen Act of the same year, and the shortening of hours in certain trades by law in 1874) were far more due to efforts of men like Mr. Frederick Harrison, Mr. Mundella, and Mr. Cross, with the legal aid of Sir Henry James and Sir William Harcourt, than to the "practical value" of lockouts and strikes. These men aimed at equality before the law, the recognition of collective bargaining by both employers and employed, and the treatment of violence and intimidation as under the general criminal law.

It may be claimed that a nine-hour day resulted in 1871 from the Sunderland strike of engineers, but unless Lord Askwith's old friend and colleague, John Burnett, had been there and had tactfully used persuasion and skill—especially in the press—to push through a half-opened door, it may be doubted whether the door would not have been slammed in the face of force. The sentiment of trade union leaders at that time may be summed up in the words of William Allan, the veteran Secretary of the Amalgamated Society of Engineers, when he said before the Royal Commission in 1867: "We believe that all strikes are a complete waste of money, not only in relation to the workmen, but also to the employers."

The early seventies showed a wave of prosperity and an increase in membership of trade unions, to be succeeded in 1879 by disastrous depression through which trade unionism emerged with greatly reduced numbers. Many strikes had occurred, but all seemed to have failed. Then came the dockers' strike in 1889. Heralded by a strike of match girls, the strike showed that unorganized workers who were not trade unionists could organize very rapidly. But it was not the strike and force which led to results, so much as the sympathy and help of the public when facts became known. The bare settlement brought the dockers' "tanner,"[1] but it was many years before more basic foundations for the dock workers were reached by inquiry and negotiations. In the same year negotiations brought an eight-hour day and some wage increase to London gas workers, but a strike brought back in the South Metropolitan Gas Company a twelve-hour shift and a profit-sharing scheme, at which the strikers had not aimed, which has practically endured in principle up to the present day. There were several strikes up to 1900 with negative results, among which were the Cotton Workers' strike and the Coal Miners' strike of 1893, the Boot and Shoe strike of 1894, and the engineering strike and lockout of 1897.

The Taff Vale dispute of 1900 became important owing to the litigation which led up to the Trade Disputes Act of 1906, but as a strike it was wholly unnecessary. The upshot of this strike, which was all over trivial matters, was that the Union became subject to the law for procuring persons who had entered or might enter into any contracts with the plaintiff to commit a breach of contract. The Union had to pay £35,000, damages and costs over a strike which brought neither recognition of the Union nor any material advantages to the men. The result crippled the Union for a long time. Was this strike necessary because years afterward it was used as an argument in the Trades Dispute Act?

In January, February and September of 1907 the railway companies would not admit requests for recognition and also took no steps to consider other claims. A ballot gave 76,823 in favor of a strike and only 8,773 against, for the purpose of enforcing the programme including the principle of recognition. No strike occurred. The Government pleaded Germany and foreign affairs and stepped in. The threat of the strike certainly had the effect of government action, which under the circumstances of the case met with acceptance by the chairmen of the railway companies. Mr. Lloyd George interviewed the company representatives, and the system of conciliation boards was established, although the policy of separate entities was still continued. Whether the strike would have gained the object in view, must be a matter of conjecture. All that can be said is that the railway employees gained a great deal without recourse to a strike. Lord Askwith's impression, from close knowledge in his own office as head of the Railway Department of the Board of Trade, was that the men gained far more than in any strike with its inevitable aftermath and loss of public sympathy.

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[1] "Tanner" is English slang for sixpence.

Government intervention failed in a cotton dispute, a great strike of engineers, and another of the shipwrights and joiners. The parties were subsequently brought together and they settled by themselves upon machinery for dealing with differences between employers and the men. In 1909 a very serious dispute arose over a proposed reduction of wages in the mining district of Scotland. The mine owners offered arbitration which the men refused. The great trouble was that the coal miners of England and Wales had managed to pledge themselves to come out in sympathy, which meant a national coal strike. The second was that some of the Scotch leaders had ulterior views, which become more generally known in 1917 and 1918. In the results, Mr. Smillie was overruled by his executive, and a settlement was effected by means of conciliation.

In 1910 most of the strikes could have been avoided if there had been less injured vanity on the part of one or two trade union leaders in the organized trades and if there had been better organization in the trades generally considered to be organized. The outstanding case was a cotton strike arising among the card room operatives over the displacement of a single man. The strike could have been avoided if the secretaries on both sides had followed the principles of procedure laid down, even if the particular type of case was not expressly covered. It was settled with some difficulty by conciliation. The Northumberland miners refused at first to follow the advice of their executive of the Miners' Federation of Great Britain on the general conditions to be observed under the Coal Mines Regulation Act. The Boiler Makers refused to accept control by their leaders and went in for sporadic strikes and were forcibly locked out. The coal miners of the Cambrian Combine striking in one pit refused to accept a provisional settlement of the chairmen of the two sides of the South Wales Miners' Conciliation Boards, advice given at conciliation meetings, and the demand of the Miners' Federation of Great Britain. They were on strike for eleven months, then went back to work on terms suggested eight months before the resumption of work to find that the terms were satisfactory upon trial. Mr. Phillip Snowdon was correct in his statement:

> The year of 1910 had been an exceedingly trying time for all who had any responsibility for the management of trades unions and the direction of the labour movement. The men connected with a number of trades unions had shown a good deal of dissatisfaction with actions of their responsible officials, and this dissatisfaction had expressed itself in some cases in open rebellion against agreements entered into by union executives and in unauthorized strikes. Discipline in a trades union was too important a thing to be injured by violation, and though an occasional irresponsible movement might succeed, such a practice must if frequently adopted, be destructive of trades unionism itself, for no executive can retain office if its authority is not respected.

If that comment is correct, the type of strikes to which allusion is made would not be deemed of value by trades union leaders.

In 1911 and 1912 there were strikes in almost every trade. There had been an improvement in trade but no general increase in wages. Large sections of work people had low pay, while prices were rising. Employers suggested that they ought to have time from the lean years before considering general advances. The shipping and port interests had employers within their ranks who were opposed to any concessions and to any bargaining with trade unions or concilliation boards. Some unions had been improving their organization and had unexpected sympathetic support from the masses of unorganized work people amongst whom new leaders sprung up, unaccustomed or unwilling to negotiate and sometimes knowing little of the business that they purported to represent. The trouble began with seamen and firemen at Southampton, supported by dock laborers and other transport workers, followed by similar workers at Hull, Liverpool, and Manchester. At Manchester there were twenty-three unions and a number of unorganized men all pledged together not to return to work until the claims of all sections were satisfied or arranged. The docks were at a complete standstill. The Liverpool owners tried a general lockout, but it did not succeed. The lockout was followed by a small strike of some railway men in Liverpool. This strike had the effect of the railway societies sending in an ultimatum to the railway companies demanding the right within twenty-four hours to meetings of representatives of the companies for the negotiation of a settlement of matters in dispute affecting the various grades.

There followed a national strike in which Mr. Lloyd George used the Morocco crisis as a reason to appoint a small committee of two general managers to act on behalf of the railway companies. At a later stage, the Government had to intervene on behalf of the consumers by a unanimous resolution that conferences be held to discuss the best way of giving effect to the report of the Royal Commission that had been appointed to consider the matters in dispute, and ultimately the report, with some modification, was adopted, together with the principle of negotiation with railway companies as it is to-day. The year closed with the Dockers and Carters strike at Dundee involving the closing of the jute mills.

It would be difficult to say that there was no value in the strikes of 1911, as they did result in increases of wages, often too long delayed, to several classes of work people. They also gave an increased belief in their strength to many classes—particularly the unorganized—and led to methods of negotiation in trades where such methods either had not existed or did not exist in the form accepted by a majority of the persons that were engaged in that industry. On the other hand, there was a great loss and suffering to all classes in the community, serious ill feeling, and prolongation of disputes for unnecessary periods. The causes of the strikes, though mainly economic, were often trivial and led to the taking of undue positions by sections of work people, which afterwards gave rise to further disputes and friction between the employer and employed. Labor is very jealous of undue changes in relative positions. Nearly all the disputes were settled finally by compromise, and many by intervention, which—given the spirit to settle—might have effected the actual results without the unheaval. As to recognition, that can generally be gained where the organization is sufficiently strong to justify the claim for particular men to speak as representatives of a trade.

The year 1912 opened up with a strike among the cotton operatives over the principle of non-union and union labor, and a strike on the Clyde of the transport workers founded on the belief in the omnipotence of the strike weapon, the latter being marked by the ignorance of the leaders as to the desires of the workers. Then came the coal strike. In this instance it is difficult to assess the value of the strike. By the intervention of the Government and an act of Parliament, the miners got the principle of a general minimum wage established by law, but they also forced the owners to unite and this led to a succession of quarrels that still leaves the coal trade in a quandary. A London transport strike occurred the following May, lasting to August, and involving 100,000 men. This long strike was most ineffectual. It began by an attempt to force the union ticket, and finally petered out on a renewed assurance of Lord Devonport that he would denounce any employer who broke the agreement of the port.

In 1913 there was an outburst in the midlands, mainly economic, and the Larkin disturbances in Ireland. The trouble in the midlands began with a strike of girls and soon spread. The employers were not united, and owing to the diversity of the trades, found difficulty in taking any united action. After a protracted struggle, the disputes ended in the recognition of the workers' union, some concessions, and a good agreement for dealing with disputes of the future. A little vision might have led to the same results without the strike. In Ireland economic troubles of long standing proved a fertile field for syndicalist aims. The strike was conducted without good generalship and judgment of the practical methods of achieving tangible results. The trade unions of England gave aid out of sympathy, but broke off in August in disgust. Mr. Larkin had attempted more than he could achieve, and so far as improving the condition of the work people, it is not probable that any advantage was gained.

In 1914 there were schemes in hand for a movement during the autumn in favor of the eight-hour day, and various other claims that might have led to considerable trouble, but in August these clouds were temporarily vanished and a different aspect of affairs came into being, but not without a tinge of the feelings and opinions engendered by the disputes of the past—and the supposed value of strikes.

During the war there were no lockouts, and there should have been no strikes. At the commencement of the war everyone desired to co-operate to succeed, and internal friction was recognized as a deterrent to national success. Strikes began with profiteering. This was the basic cause of the Clyde strike of February, 1915—whatever the subsequent developments may have been. A serious condition arose, however, when the advice of some of the ministers and labor leaders of note and labor leaders of the district was disregarded by other ministers in the South Wales coal dispute to gain a temporary advantage. Encouragement was given to hostile minorities, thus impairing the influence of the moderate labor leader. In spite of these matters, the principle of the supreme importance of the war led to remarkable adherence to voluntary arbitration, and later to compulsory arbitration, and on the whole it may be claimed that this compulsory machinery did good service during the war. In 1913 the number of cases referred to arbitration was about forty-five, but in 1918 the number had risen to over three thousand five hundred, and the number reached nearly eight thousand during the five years from 1913 to 1918. According to the Twelfth Report of the Conciliation Act, these awards were almost universally accepted.

Shortly before the armistice an epidemic of strikes seemed to have set in, the most disturbing one being that of the Metropolitan Police, which was settled. At the time of the armistice there were many possibilities of claims likely to lead to strikes. The earliest of these came in the cotton trade in the spinning and card room sections; this was followed by a strike in the engineering trades over a demand for a forty-seven-hour week in place of fifty-four. The concession was given without a dispute, and while it saved some trouble in one trade, the manner in which it was given produced as much consequential trouble as if the principle had been conceded in answer to a strike without attention to details. The employers concluded that forty-seven hours meant actual work, while the men said it meant something else. Before there was an opportunity for the two sides to come together calmly to solve these differences of interpretation, notices were posted and shop meetings were held—growing into mass meetings everywhere. Mr. Clynes remarked: "Here was an instance, a very outstanding instance, of what at least might be called a great inadvertance, if not a very great blunder. Business men in any one trade should be careful of what they are doing, and the associations of workmen should be equally careful because of the influence of example."

After the armistice, there were strikes all over the country. The most important was the coal strike on the proposals of nationalization of coal mines, increase in wages and shorter hours. The dispute was referred to the Sankey Commission of reconstruction. In the autumn came the railway strike followed by the iron moulders' strike. This latter strike lasted a long time and did a great deal of harm to the whole engineering trade with very small, if any, tangible results to the moulders themselves. Of what value were these strikes? They brought in some cases temporary gain to sections of industry, but they harmed the community as a whole. They raised prices—which led to the pursuit of prices by higher wages, which could not be maintained. By the hindrance of production they brought about unemployment, so that the country is slowly engaged in undoing the temporary expedients then tried. It was a period of innovation without any orderly development. Some of the changes, particularly of hours, may be maintained, but it will take some time to build up the intervening conditions which would make those conditions stable and based on a sure foundation.

Generally speaking, there are few deductions in favor of the strike which can be drawn from this period, a temporary period of exhaustion now shadowing industry. The strikes aided, if anything, in preventing the growth which was open to the country at the close of the war. On the other hand, there were negative results in principle, which may have far reaching effects on the judgment of people. These strikes have led to an extreme distaste in the minds of many people against nationalization of industries. They have caused government interference to be regarded with great suspicion by almost all classes. They have aided in the exposure of the useless waste incurred in the sympathetic strike. They have shown up the futility of direct action and the very strong dislike which the community evinces to any dictation by one section of men or one class of men.

In conclusion, it is not advisable to advocate legislation or compulsory arbitration to lessen industrial disputes. These remedies cannot meet the difficulty. It should be met by the spirit of the people realizing the danger that arises from such disputes, and by the education of the leaders of both the employers and employees. These disputes do not lead to a millennium, but to disintegration, the danger of which is not sufficiently realized. Take as an example the vital engineering trade. In 1889 they received 35 shillings per week, and now —with the cost of living higher by say 100%—they receive 57 shillings, after thirty-three years' adherence to the policy of disputes, and the loss of millions to men and firms, in preference to efforts towards the success of the business in which they are engaged.

Statistics furnished by Mr. Hilton, of the Intelligence and Statistics Department of the Ministry of Labor, give some idea of the magnitude of the economic losses suffered from the system of lockouts and strikes from 1893 to 1922. In reported strikes during this period, excluding disputes affecting less than ten men, there have been 14,702,000 directly affected and 2,831,000 work people thrown out of work at the establishments where disputes occurred though not themselves party to the dispute—to say nothing of the millions of work people thrown out of employment in other dependent trades. In this period there have been lost 381,817,000 working days—over 1 million working *years*. Out of the 14,703,000 persons engaged in strikes during the twenty-nine and a half years from 1893 to August, 1922, 5,990,000, or over 40%, were engaged in them during the three years, 1919, 1920 and 1921; and out of the 381,817,000 working days lost, 148,014,000 were lost at a time when the world was poor and when every effort to repair damage was necessary, at a time when obligations and debts have had to be met and when the estimated gross expenditure on public service alone amounts to £948,113,000 as against a total expended during 1913-1914 of £207,817,437. Can any nation continue for a series of years to bear a continuous restriction on ordinary progress and upon the establishment of confidence, without confidence, ordinary progress, and reasonable chance of prosperity fading away? Uncertainty is the clog on trade, and by trade our nation lives. The figures should make every moderate man and woman pause.

STANDARDIZATION IN GERMANY[1]

STANDARDIZATION of industrial production has been one of the important factors in enabling Germany to maintain its industrial machine intact, in the face of the multitude of obstacles now confronting that country.

The extent to which Germany has so far succeeded in keeping her industrial machine intact, is due in no small part to the elaborate scale on which her standardization work is performed.

The elaborateness of the organization for the work, its activity, and the scale on which it is being carried out constitute a new development in industrial organization.

Practically every important manufacturing concern in Germany is officially participating in the industrial standardization program of that country. More than a thousand German companies have formal standardization organizations within their own works. These organizations are called "standards bureaus." The larger firms have branch bureaus in the separate departments, or in the separate factories. One of the well-known companies has twenty-one such branch bureaus, employing in all a special staff of more than one hundred. Another firm has a permanent full-time staff of over two hundred in its various branch bureaus. In all of the great firms the bureau reports directly to the general manager.

The extent to which industrial life in Germany has been coordinated is shown by the fact that more than seven hundred German national standards have been adopted. This includes only those in which several different industries are concerned, and which are approved by the central national body. These include fundamental engineering standards such as: standard diameters, tapers, sizes of keys, threads, fits, etc.; materials; tools; measuring instruments and gages; machine parts, including handles, ball and journal bearings, etc.; gears; and sizes of paper.

In addition to this work of the central body and closely correlated with it are no less than sixty-five special industry committees actively working on such subjects as: the standardization of pipe fittings, piping and accessories; welding; steel construction; concrete and reinforced concrete; fire fighting equipment; windows, doors and stairways; foundry practice; the printing trades; merchant marine; locomotives; motor trucks; laboratory apparatus; photographic supplies; non-ferrous metals; precision tools; sand, gravel and street paving material; typewriters; highway bridges; rolling mills; and railway car construction.

A striking example of the efficiency of national standardization as it has been developed is shown in the case of a rush order placed with German manufacturers for 200 locomotives for delivery to Russia. Production of different parts was allotted to seventeen different manufacturers to be produced strictly upon the plan of interchangeable parts, no one manufacturer making a complete locomotive. No serious practical difficulty was encountered in filling the order. The inspectors made a particularly striking test of the feasibility and accuracy of the plan by ordering a complete locomotive to be assembled from parts chosen at random from the parts furnished by the seventeen manufacturers. It proved to be ready for service immediately after assembly without the necessitly of any disassembling for readjustment.

Standardization engineering is now a recognized profession in Germany. The rapid development of standardization organizations within the companies has made a large demand for such work. Advertisement for standardization engineers and for such positions regularly appear in the engineering press.

An interesting development of the last few years is the appearance of consulting engineering firms specializing in standardization work. There are now five such firms in Germany. This work is closely connected with industrial or efficiency engineering, in which there is now great and growing interest in Germany. In general, it appears to be much more closely connected with the movement for industrial standardization than is the

(*Continued on page* 248)

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[1] From a Bulletin of the American Engineering Standards Committee issued December 6, written by Dr. P. G. Agnew, Secretary of the Committee, who recently returned from Europe, where for two months he made a study of the standardization movement and the manner in which European developments in this direction are likely to affect American industry.

TWO PIONEER PAPERS ON INDUSTRIAL RELATIONS[1]

By Robert G. Valentine[2]

I. SCIENTIFIC MANAGEMENT AND ORGANIZED LABOR[3]

The Functions of the Industrial Counselor—Possible Relations of Scientific Management and Labor Unions

IN BEGINNING my work I had to adopt as a working hypothesis very distinct tentative beliefs. One working hypothesis I adopted was a belief in scientific management, and I claim to understand it very much as you do. The second hypothesis is a belief in absolute democracy in group action on matters. Without assenting to any particular form of association, I feel that in any community or in any group of people, where you do not find a sane quiet beginning towards group action, that group or that concern or those individuals are headed for trouble. And so in accepting the facts of our time as we find them, I believe in trade unionism as one distinct form of democratic development, despite all its imperfections and its monstrous economic fallacies.

Last Saturday I was called on the telephone by one of a firm of Buffalo lawyers, who asked if I knew anything about a text-book concern in Massachusetts. I told him I had no accurate information about it. He said, "Assuming what you have seen in the papers and what you know about it is all true, would you consider that firm financially sound at the present time?" I said, "Yes, sir."

Then, "Assuming also what you know about it, would you consider that firm or would you not consider that firm as sound in its methods of management and its processes of doing the work?" Knowing the concern to be what any of us would consider an up-to-date, clean-cut business concern, I said, "Yes; I should consider it perfectly solvent, both financially and as regards the way it works its processes."

Next I was asked, "Do you think that concern is industrially solvent, meaning that the relations between employers and employees in that concern, and of all the partners in that concern in any relations they have with each other and with their employees, and with outside labor forces of any kind, and with the management itself, are not only all fixed pretty soundly, but are developing in the right direction?" I replied, "From what I know of that concern I should not consider that concern industrially sound. I do consider it financially sound. I do consider it sound as to its plant and equipment and methods and processes of manufacture and operation, but not so on the side of human relations existing all throughout." The man inquiring then said, "That is what I wanted to know. I had some doubts about it myself; and we will look into it further now, from what you have said."

Now, to me it is significant that that type of question is rising. I want to place before you that same question in another form.

Imagine that a large industrial concern desires to issue new capital stock. The ordinary process is for it to go to its bankers. Bankers talk over the situation, and if they think generally well of the plan, they ask the industrial company to have its financial conditions certified to by an impartial disinterested concern of public accountants. Bankers also get, either from those accountants or directly through a firm of industrial engineers, a certificate as to the condition of the plant and the equipment. Those certificates appear in the prospectus of the new securities, and stand to the investing public as a mark of the care taken by the bankers before they lend their names to the flotation of the securities.

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[1] So abundant has become the literature on industrial relations during the past five years that few realize that less than ten years ago that literature was meager, and the voice of Robert G. Valentine was as the voice of one crying in the wilderness. The two papers reprinted here are of historical value and the bulletins in which they appeared, out of print. While the members of the Taylor Society did not agree with Mr. Valentine with respect to many of his views, it has always been a source of gratification to the Society that it had the vision to give him a platform and an audience.

[2] Born West Newton, Mass., November 29, 1872. A.B. Harvard, 1896. Commissioner of Indian Affairs, 1909-12; Chairman, First Massachusetts Minimum Wage Board, 1913; Industrial Counselor, 1912-16; died September 15, 1916.

[3] An address at the Annual Meeting, December 5, 1914.

It also assures the public that the concern did not have capital tied up in unnecessary stores; that its methods of storeskeeping were in keeping with economy.

The day is not far distant when the same bankers will demand a third certificate, in connection with any such transaction. The third certificate will testify to the industrial relations existing within the concern. It will be made by industrial counselors, and will certify as to the industrial relations existing in this concern. This concern may have a good bill of health on the first two points, and yet in the next six months they might have a strike on their hands which would make their securities worth nothing beyond the pieces of paper they are written on.

I think that third certificate will read somewhat as follows:

"We have investigated the condition of the X. Y. Z. Co.; first, as to questions of fundamental organization, particularly in their relation to the economic and social forces of the day; second, we have examined all questions of personnel such as description of jobs, selection and development of personnel; third, we have investigated questions of rates, amounts and methods of pay; fourth, we have examined questions of attitude toward labor unions, and all forms of association; fifth, we have investigated relations to labor laws, both state and federal, and to court decisions affecting labor; sixth, we have investigated questions affecting the relations of the concern to the public, particularly in matters of safety, sanitation, health and regularity of employment; and we find that the X. Y. Z. Company is giving due attention to the human relations in industry and is not likely to be involved in serious labor trouble or to carry a heavy burden of dissatisfaction cost."

Such a certificate may seem like the wildest dream to a large percentage of employers in the world today, but it will no longer seem so when we can educate ourselves to the point of being willing to move on from some of the outworn political and economic and social theories of our time, and give to these problems some of the thought now given to questions of finance and plant. The manufacturer will then change from the condition of a blind or honestly puzzled employer, clinging to traditions of inherited belief in a worn-out economic and social theory, into a business-like practical sense of the concrete industrial forces and opportunities around him.

In making an audit of this kind—an industrial audit—the first task of the industrial counselor is to get the concern oriented. This means analyzing its organization and finding out whether this organization has effective roots in modern conditions. For example: A concern which is found to be doing nothing toward some form of self-government among the employees can get from me no honest certificate of security against labor troubles.

One of the first things a concern anxious to get headed right must do is to lift its employment department from a subordinate place in some operating department to a level with the manufacturing, selling and accounting branches, and place it directly in charge of a partner or major manager, one of whose chief duties it shall be to develop a perpetual human audit of the kind I am suggesting here. With this personnel branch of its business thus developed at one end of its line of major functions, and some form of internal association among all its members developing at the other end of the line, the concern will become more and more conscious of its real industrial status. From a business point of view no organization of this kind can or should be defended except on the ground either that it pays or that it is necessary in view of existing or imminent law. In saying this I am not for a moment denying to business men other virtues than business virtues; but it is a cardinal point of good business administration, as of ethics, to keep pay and patronage apart.

Don't be led astray by the size of the job when I say that the head of the personnel division of a concern must be actively in touch with economic, industrial, social and political forces of the day; he must be alive to the meaning of trade unionism; he must be able to distinguish between its constructive meaning and its destructive meannesses. He must be equally ready to admit the meannesses of his fellow managers, and anxious about their constructive side. He must be alive to the trend of even the humblest business toward a status in the public service, for the public character that our railroads have taken will be rapidly followed by an effective public interest in the foods we eat and from which we are individually powerless to bar the poison. I am not asking that the personnel manager shall approve of these things. It is not a question of approval or disapproval, but he must be alive to them. So he must be alive to the growth of cooperation, to the real contribution of the trusts, to the growth of consumer's controls, to the backwardness of our educational system as a whole, despite its noble exceptions. He must be alive, still whether he agrees or not, to "votes for women" and the feminist movement. For the personnel manager, to be fit for his job, must be an industrial counselor.

And these are questions which affect your business. And when you go to put them clearly down on paper and to analyze them, you will find them not more numerous or more varied than the problems you face in your selling and manufacturing departments and in your accounting department.

While not more numerous and not more varied, it is true they are more subtle—harder to get a line on, because, just as in physics, you have a number of variables full of different elements. Yet nevertheless it is fairly definite at that end. And at the other end of science you have the whole field of socialism, which is full of the indefinite and intangible, and yet is capable of scientific analysis.

Having charted the situation of the concern in these questions of fundamental organization, the industrial auditor passes on to questions of personnel. What are the fruitful sources of labor supply for the concern? Except at the bottom grades is the concern itself its own best resource? It should be. Roads *up, out,* and *in,* should be developed. Its basic discipline should be its own educational system. Its foremen and superintendents should be teachers instead of bosses. Are the jobs clearly stated? The best concern today has criminally wasteful gaps between functions and overlapping of functions. Are the wastes of selecting wrong people for jobs minimized? Is the concern alive with useful counsel one to another? Are individual friction and jealousy seared and withered and cooperative spirit drawn forth by the magnetic power of what the concern as a whole stands for, clearly held in the minds of each individual within it?

The industrial auditor then passes to questions of pay. Is the wage system already beginning to be modified by some form of profit and loss sharing, which, by the way, can only healthfully exist when a concern has at least rudimentary beginnings toward that bogey of the unawakened employer called "share in the management." The verbal bogeys lose their terror before easily installed sane beginnings of self-government. What do the people make by the week, by the month, by the quarter, by the year?

Out of the pay envelope must come the living powers of employee and manager. For both, these questions are vital: purchasing power; savings; insurance against illness, accident, unemployment, old age and death; housing; and such social questions as health, education and recreation. That is what each one in this room is up against, whether he considers it or not. How far may and should the concern efficiently share in these?

And from these more internal questions of organization, personnel and pay, the industrial auditor proceeds to the relation of the concern to labor organizations, labor laws, and public standards. If the concern deals with labor unions, are its dealings merely defensive or are they constructive? Does it take a legitimate hand in seeing that wise laws are framed, or does it fight the principle of a new labor law *in toto* and stand aloof from details only to be handed later an inefficient statute, a hybrid output of timid politicians and sentimental philanthropists? Are the employees safe from fire and accident? Are conditions sanitary? Is the need of a healthy personnel understood? The shifting force in a large business is, perhaps, the greatest waste of our times from the point of view both of the business itself and of the community.

The development of the technique of an industrial audit is, of course, in its infancy. But already the constructive power of merely asking these businesslike and practical questions in an ordered and businesslike fashion has been wonderfully fruitful. They open up new horizons to business enterprises. The organization chart of an old time industrial engineer showed a lot of pretty oblongs or ovals connected by interesting lines. Functions and positions held impersonal sway among them. In the new organization chart, the people appear by name; the best paper organization in the world is nothing apart from the men and women who run it. The quality of the personnel is the last and greatest fact in business solvency.

Today when a business concern gets into labor troubles the usual course is for the management to call in their lawyer. As a rule, lawyers have no grounding in the industrial problem; and furthermore, the methods and practices of our courts are not at all the methods and practices proper to the decision of industrial questions. That is one reason why the courts are not the arena in which labor problems can be successfully tried out. Courts are not equipped either with the knowledge or with the machinery. Many lawyers, of course, as individuals, have gone into various aspects of the industrial problem, and some of them so deeply and skillfully as to have been already in a position of substantially practicing another profession alongside of their legal profession.

The industrial counselor should not be the advocate of either side in a controversy, helping it to put its own ideas across. He should be a master in the growing laws of industry and should have it specifically understood in connection with every service he performs, that his job begins and ends by helping his client to understand and fulfill those laws. Thus he is valuable either to employers, employees, or the public, and whichever is his client, in the sense of paying him, can expect from him only such service as is to the interest of all three parties. No scientific and just service could be built on other grounds. It should be repeated that his job begins and ends by helping his clients to understand and fulfill those laws; and thus he is valuable alike to employers, employees, and the public.

POSSIBLE RELATIONS OF SCIENTIFIC MANAGEMENT AND LABOR UNIONS

Suppose a manufacturer should say to me, "I wish to start, equip and run a new plant in a certain section of the country." I suppose the ordinary method would be to begin to decide about the size of the plant, what you would make, et cetera. After you had decided what you were to manufacture you would start to consider building the plant and equipping it, and the processes of manufacture and management. And after it was all together you would expect to pick up your labor supply.

The first thing that I would do if I were confronted with such a proposition would be to make a study of the labor situation in that locality before the ground was broken. First I would take up the question of labor supply with all the existing sources of labor supply at that time. I would go to the labor unions and raise all the questions in advance that might be raised afterwards, as far as one could humanly foresee them. Next, I would show that insofar as there were any unions in that vicinity connected with those trades —I should run a preferential shop—I would appeal to the unions for men before I appealed to anybody else. If they could give the men I wanted I would take them in preference to anybody else. Then I would say that I would pay as the piece rate of my wages the union rate in that vicinity, regardless of whether or not the shop were unionized. And any other methods of pay would have to be built on that.

Then I should make the union mad by telling them that I would pay a minimum wage in that factory. My great quarrel with the union men is that they have their minds fixed on so much an hour, and they are giving shamefully too little attention to the idea that a week is the shortest unit a man can count on.

I should like to see the union leaders awaken to the job, and see that the ideal of employment is not the week but the year. A year containing the four seasons is the lowest ideal unit of planning which one should engage in. But if one could get industry on a carefully graded weekly basis, instead of the hourly rate, a great step in advance would be made.

When I put that question to a small group of manufacturers the other day, they came back and said, "Supposing you could not afford to pay the minimum wage in some catastrophic time?' Then I said, "That concern should be declared industrially insolvent, exactly as they do when a man does not meet a note or a company does not meet the interest on its bonds."

Then I would demand that you plan as far as you possibly could for regularity of employment, first by regulating your own business to the greatest extent possible; secondly, by establishing some cooperative relationship with other concerns in other lines of industry, so that when your slack period came against his full period, you could make some shift to the advantage of each; and thirdly, as business men looking after your own interest, by taking some kind of interest in state public work, so the state would not be going into the market when wages were high and business good, but instead would wait until conditions of unemployment were bad.

When I had done those things in regard to the labor situation then I should turn to the side of production, and I should consider there everything that deals with individual capacity in its relation to securing the greatest possible output socially possible at any time. To meet the problem of limitation of output, it seems the first thing is to develop the selling department as nearly as possible to a state of perfection, and study the flow of orders that will come into that plant through proper salesmanship. It has been my experience that frequently the selling side of the business is left to be organized until long after the factory side has been organized. When I had the selling organization completed in this new factory, then I should do all my planning work, and all the system for maintenance of schedule, and all kinds of work analysis. I think before the motion-and-time study people get on the job and task matters are considered, these things should be considered.

Then I would shift the lower costs to the heading called "The rights of the Consumer in the Business"; and there I should lay out the maximum conditions of the business. I should not wait for the law to reach me—I would have no watered stock, restricted dividends, no concealed management salaries—and I would see that the sanitary conditions are good; and then I should say, that it is due to me and to the consumer for me to get my unit cost lower and lower and lower.

If there were some labor union men in this meeting I should take pleasure in saying that where I had arranged to deal with the unions—and this of course would be easier in a perfectly new undertaking, rather than in an old one, although it is practical in both—I could still get by every single thing that a majority of you people in this room would declare to be legitimate scientific management; that I could get by every single element, because the whole business of relationship between employer and employee would have been shifted from the violent method of adjustment to a constitutional basis, and the whole list of crimes now committed by labor unions and by employers also would have departed.

II. THE PROGRESSIVE RELATION BETWEEN EFFICIENCY AND CONSENT[1]

Definition of Scientific Management

BY SCIENTIFIC management I mean those principles of business conduct which are both explicit and implicit in the life and work and writings of Frederick W. Taylor.

I mean those principles considered in their purity as principles and considered apart from the particular and local applications of them made by Mr. Taylor.

I mean those principles considered as principles very gropingly stated by him and as to statement still in their youth, so to speak.

I mean those principles considered as one root of economic life, and to that extent thoroughly sound, but still showing clearly in their present statement that they have not been worked into thorough coordination with other equally vital principles of the economic and social world.

By scientific management I mean further attempts to apply the principles as stated by Mr. Taylor as they are applied, for example, in the Tabor Manufacturing Company of Philadelphia, the Plimpton Press of Norwood, Mass., and the Link Belt Company of Philadelphia.

And the actual methods of applying the principles at those plants I regard as only indicative of what the real application of the principles as laid down by Mr. Taylor would be. They are sufficiently indicative, however, to furnish the materials for a sketch of an ideal shop run according to the Taylor principles. They further furnish us, I believe, with the basis for the belief that the principles stated by Mr. Taylor, insofar as they are fully applied, furnish the latest word in the progress of the mechanics of industry. For simplicity in this paper, we shall deal with these principles only from the point of view of the mechanics of production.

I am not forgetful of two important facts in connection with Mr. Taylor's life:

1. That many of the impressions he conveyed in describing his ideas did his ideas themselves and his real spirit great injustice.
2. That his own conception of much that is contained in his writings is in many cases fragmentary and apparently short-visioned.

It is, nevertheless, my belief that when the fullest allowance is made for these two facts, Mr. Taylor's contributions to the industrial world will gradually prove themselves to be among the major contributions to human progress. The human limitations of Mr. Taylor's thinking and methods of expression and the crudities of the application of his principles in practice at the present day will weigh little as compared with the revolutionary effects his conceptions will have on the progress of the world when they are thoroughly understood and freed from confusion with the short vision of the ignorant, the merely imitative, or the shyster practitioner.

It should also be noted at this point that much which is being done under the name of scientific management and much of the criticism of scientific management is only serving to give undue importance to the work of the efficiency charlatan, to the loose social thinker, and to the attitude of the half-informed public, all of which obscures the real issue. The useful thing to do is for all persons honestly interested in the subject to simplify the problem and to try to solve it in its purity apart from considerations which are not of its essence. It is precisely this which both the most earnest advocates of Mr. Taylor's principles and the most earnest advocates of labor had failed to do up to the time of Professor Hoxie's work. If Professor Hoxie can complete his work through digesting the materials he has gathered, and also through making an investigation of labor in its relation to scientific management as he has made of scientific management in its relation to labor, we shall begin to be in a position where we can get at the question of scientific management in a truly scientific fashion.

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[1] Abstract of an address presented at a meeting of the Society held in New York, December 10 and 11, 1915.

Our immediate task together is to see whether we can begin at the present time to get a line on that genuine application of the principles of scientific management which is beneficial to society as against that alleged application which is dangerous to society. I shall try today merely to lay the grounds for the discussion of what I believe to be one basic standard of judgment. If we try to state the problem clearly, I believe that we shall be able to formulate this standard. The standard by which to judge is to ascertain whether any particular application of the principles involves the recognition of a truly independent and organized consent on the part of the workers.

By my statement of the problem I shall endeavor to show that the standard as above stated is a primary standard by which to judge all management.

THE EFFICIENT SHOP

Let us begin by getting clearly in our minds a picture of an efficient shop as we can easily construct it out of the principles laid down by Mr. Taylor and even out of the present attempts to apply those principles.

I shall picture this shop only in outline because you are all familiar with the details of the picture. I simply want to be sure that we do not lose the proportions of the main outlines in the particular interest which any one of us may have in certain particular aspects of the picture. In my description of this shop I shall, for the moment, ignore the human element entirely as it actually exists in the shop and describe the people handling the operations of which I shall speak as people who, whatever they may be outside the factory, are while in the factory simply animate machines, people who have either been trained or trained themselves, it matters not which for our present purpose, to do their work with all the precision of the most marvellous engine and with all the automatic delicacy and grace and perfect adaptation to environment of the poised bird on the wing.

In such a shop first of all we should find Mr. Taylor's principles applied to the financial and sales ends of the organization. These applications I shall not pause to consider here (because, for simplicity's sake, we shall deal only with the strictly production problem) further than to point out that in any really efficient organization the high spots all along the line must be secured as to their efficiency before the more minute details are highly developed. A great deal of the scientific management in use at the present day, whether in sales, finance, production or personnel, is similar to the situation in which a great deal of money might be spent in curing of flat foot a person who had some disease of the knee which might lead to amputation. This lack of coordination is an excellent illustration of one of the basic inefficiencies which penetrates the world today.

Assume, however, that the ideal shop we are picturing to ourselves has avoided these insults to common sense. It will on its production side proceed to organize every single one of its activities in relation to every other activity. That is the essence of the whole matter. That is the essence both of planning and of action in a shop. That is the essence of work analysis,of storeskeeping, of the layout of equipment, of routing, of functionalizing and of costs flowing steadily and thirteen times a year into the profit and loss statement as a by-product of the management practice itself.

In such a process of organization all former standards are revalued, all precedents are fearlessly analyzed; no process which has been improved upon is retained a moment longer than is necessary smoothly to install the better process. The crafts and trades as we have known them are progressively broken up under this process; work is ever more and more specialized and the steady tendency throughout, because of the fact of this specialization, is to need at any particular point of any particular operation the thinking, judging human being less and less, so that the mechanically and easily-trained human being more and more is used, and more and more tends in his turn to give way to inanimate machinery. At the same time that this tendency is going on, the brain of the shop, as has been aptly said, is developing in the planning room until the shop is becoming as perfect an organization of relationships between brain and nerve and muscle as is the human body.

In itself all this is good and but the logical outcome of the introduction of machinery. It means lower unit costs and more wealth. Any force of society which attempts to turn back this progress, or halt or even slow it up is contending with the inevitable. Such a factory as we have outlined is unquestionably the type of the major production method of the near future throughout the world under any form society may take.

REENTER THE HUMAN BEING

So far we have no problem. But the moment that we substitute in the ideal factory which we have sketched the human being as he exists in the world today, we have our problem. People who have been no less pioneers and discoverers in the field of both general and social psychology than Mr. Taylor was in the mechanics of business organization, have found certain principles as basic as Mr. Taylor's which spring from quite other roots. These equally fundamental principles center in this statement: the days of compulsion—the days of service without consent—are over. In tremendous areas compulsion still exists. We are still conscripted into the world. We are still in great areas of our lives the unconsulted objects of powerful forces. With all our magnificent engineering achievements and somewhat more slowly developing common sense, we are still individually and collectively the apparent sport of earthquake or lightning. When we have once decided to take passage on the sea, we have, so to speak, enslaved ourselves to the possible storms at sea. But in all those areas of life wherein man deals with man, great breaches have been made in the ranks of compulsion. We find, however slowly and haltingly, through the decades a steadily increasing assertion of the right both of the individual and of the individual in groups to give his consent to that which from any other human quarter he is desired to do.

Consent from the point of view of life in the factory has two main types: individual consent and group consent.

As to individual consent, in some cases it is of the type of the traveler who decides to take ship, abandoning at the factory gate, as the other does at the dock, the right of being consulted by the management as the other does the right of being consulted by the captain. In other cases, continuous rights of consent are still retained.

As to group consent, it is of two kinds: the consent of the factory group by itself, and the consent of the factory group as a part of an interfactory group.

The most casual study of the whole principle of consent will show that it always tends to strike its roots into wider and wider areas. It is the failure to recognize this principle, for example, which makes the present Rockefeller plan in Colorado a sociological joke and in the future, as in the past, likely to hold a sociological tragedy.

I think there will be little debate among any of us as to the general proposition that a free man—a consenting man—is the more desirable worker. Where we have broken down in imagination is in failing to realize that organized consent as well as individual consent is the basis of a more efficient group. We have been accustomed too much to think of democracy as almost necessarily a mere crude expression of untrained information through votes. Almost nothing has yet been attempted to build up a finer texture of democracy through self-training groups, constantly growing in strength through the consideration of scientifically accurate data.

Another error which we have lazily accepted as a failure of democracy is the idea of life as a fairly static thing. This error is clearest seen in the common statement that certain types of people, certain whole groups of people as well as certain individuals "are not worth any more." The reason they are not worth any more is largely because no adequate educational process has been tried. The theory is disproved by our immigrants when they are given the right chance. It is disproved in the tremendous progress the children in our schools make over the status of their parents. It is disproved above all by the absurd implication that human beings are less the field of the inventive organizer than machinery. More than any other one thing, life is an educational process and it is only when life is artifically restrained, artificially hampered, that, because the educational process is lacking, we wrongly think of life as static and of classes as efficiency castes.

The problem then is to combine, not through failure to come to grips and not through hostilities, but in constructively organized ways, the latest developments of efficiency in production with the latest developments of the science and art of democracy.

A primary standard, then, by which I should judge scientific management would be to consider whether or not the scientific manager and the student of social psychology, who, in shorter terms, might be called "the man of affairs," were jointly addressing themselves to the solution of this problem—the relation between efficiency and consent—in each particular industrial concern; and whether they were recognizing that the ultimate ideal will be the consent of the interfactory group as the only one broad enough on which to build stable conditions of efficiency cooperatively with adequate safeguards to ensure that the human educational process shall not be turned back, stopped, or delayed any more than efficiency shall be turned back, stopped, or delayed. The educational problem is the fundamental problem of statesmanship and it is a minimum demand of that statesmanship that industry shall be a school of citizenship.

CONCLUSION

Three points emerge clearly:

1. That craftsmanship in the old sense of the term is doomed.

2. That as craftsmanship can no longer furnish the base on which labor organization can grow, unionism, group action, will have to build itself up on a base as broad as the whole educative process itself instead of on the particular craft. Even today the real strength of unionism is that unions are effective consumers' organizations with a primarily educational interest. As this fact gradually sifts through the minds of employers and managers, they will gradually see that the most inefficient thing they can do is to fail to cooperate with such a great source of energy. The organizations of workers, on their side, can, when once that stand is taken, be counted on to consent to all that makes for efficiency. They will do this because in all legitimate enterprises—which are all enterprises where real service to the public is the test—the workers and the management will be equally concerned in perfecting the service. And at the same time, under constitutional industrial relations, they will contest the share in the management and the share of the product between themselves and with the consumer.

3. That the interrelation of the forces we have outlined—the forces of efficiency and consent—is constantly taking place in the world today in all kinds of crude and unorganized ways. Here and there real elements of interorganization between efficiency and consent appear. But for the most part the labor agreements in operation today are looked upon by employers as a necessary evil and by the workers as steps in their assertion of their rights as consumers and having little detailed relation to production processes. The beginnings of something far better than this are seen in the agreements in the garment trades wherein the manufacturers, the workers and the public are all represented as parties; and in certain kinds of organization which are being worked out in a few business concerns. There is still too little of real accomplishment in this direction to enable us to predicate with any certainty what the course of the development in details of organization will be by which efficiency and consent are made continuously revitalizing agents for each other.

Yet I believe that the point has been reached where it is profitable to attempt to gather together such experience as has been gained and relate it to the probable development of the next few decades.

With this purpose in view, I submit the accompanying chart.

This chart, it should be constantly borne in mind, is neither a dogmatic nor propagandist document. It is merely a working hypothesis by which to test out the facts of business as they occur daily at the desks of managers and at the trade union council tables, or in the occasional assemblages of unorganized labor. The whole aim of this discussion, as I see it, would be falsified if we deluded ourselves into believing that in any seeming array of facts we had found the truth. The only unforgivable thing would be that we, as social scientists, neglect to take into consideration any facts of the moment connected with all the forces that do exist; the only thing that seems to me axiomatic is that when forces do exist, they are better when organized, trained, educated, developed and enlisted in an effective way—anything you like—rather than allowed to play among and upon us blindly.

The picture of these forces submitted in this chart may be summarily commented on, as follows. In every form of factory there are human forces at work which, whether they are organized or not, are of at least equal importance with the forces governing sales, production, and finance. These forces take the two aspects of relationship to a growing intelligence on the part of the managers and a growing intelligence on the part of the employees.

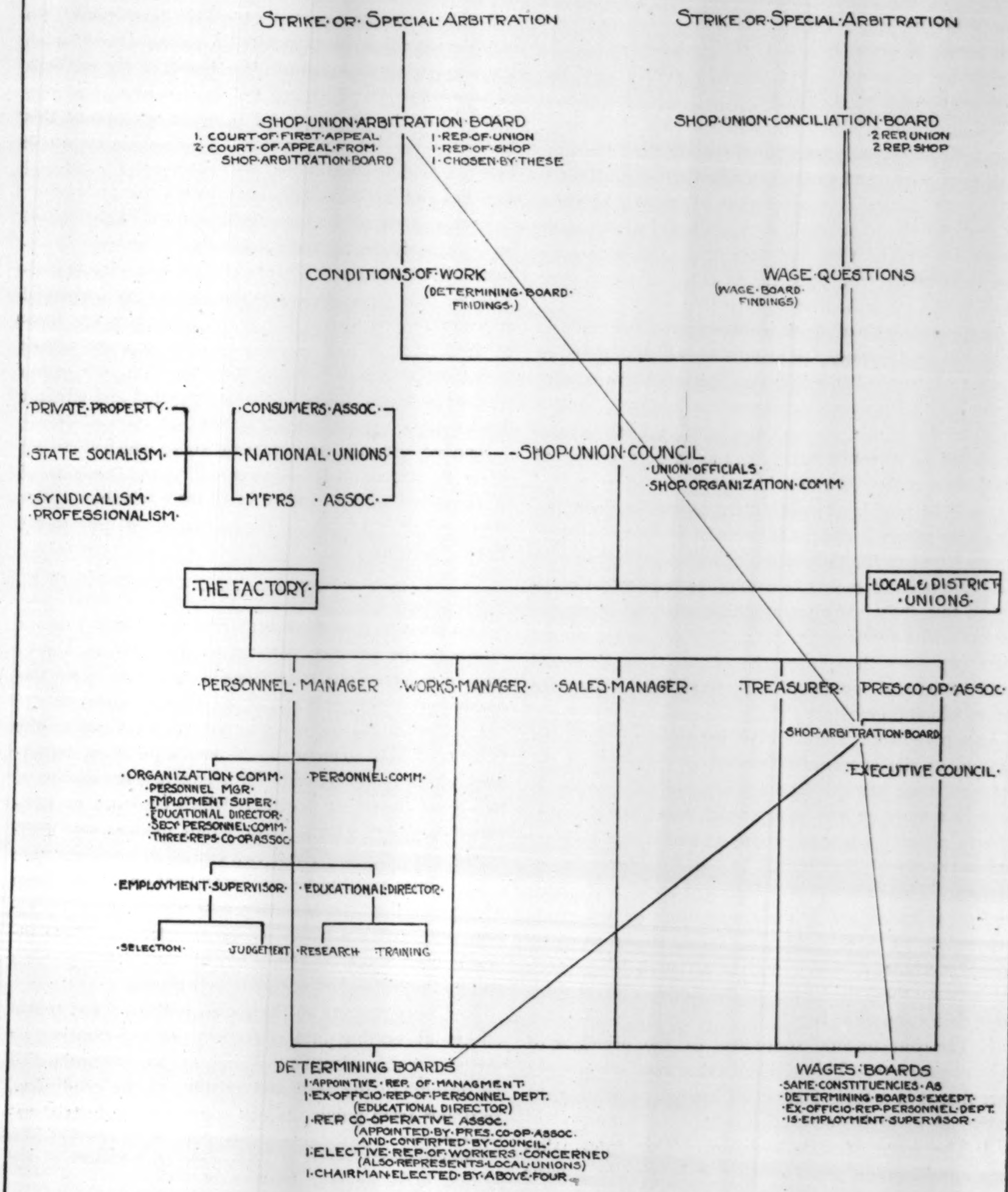
Where these forces are organized they may take the form shown on the chart under the personnel heading at the left end of the factory line and under the cooperative association heading shown at the right end of the factory line. The relation between efficiency and consent is provided for in the form of organization shown, through the relationship between the research department of the education division and the determining boards and wage boards. The research department is where plans of organization are worked out and where work analysis is done. The determining boards and wage boards, acting on the scientific facts put before them or the nearest approximation to such facts that can be obtained, sanction the findings in the interests of all concerned.

The facts thus put by the research division before the determining boards and wage boards furnish the material for the whole structure of organization and become an inescapable factor at every debatable point. Thus, if appeal be taken from any findings of a determining board or wage board to the arbitration board shown on the chart, the case is necessarily considered in the light of the best available facts.

Related to the factory, sometimes by formal agreement and sometimes through the entirely unorganized relationships of its individual members, are the local and district unions, or even the mere incoherent thoughts

POSSIBLE RELATIONS BETWEEN FORCES OF EFFICIENCY & CONSENT

ROBERT G. VALENTINE



and feelings of unorganized labor. As organization begins to take any shape at all, it begins to crystallize into some form of a shop-union council wherein the interests of the factory and of the local and district unions are to some extent formally organized. In such forms of organizations as the garment trades, the shop union relationship has formally added to it the third relationship of the public.

The questions which come before such a shop-union council divide broadly into questions affecting the conditions of work and questions affecting pay. In the shop-union council's consideration of these questions, the findings of the determining boards and of the wage boards are before it so that here again the best available facts necessarily form the material of the discussion.

As to conditions of work, experience so far tends to show that all questions are arbitrable; namely, they are capable of being decided by an impartial third party on the basis of the facts presented.

Questions of pay, on the other hand, are still so unsupported by scientific basic facts as to be a matter of conciliation rather than of arbitration.

It will be seen in the chart that appeal lies from the shop arbitration board to either the shop-union arbitration board or the shop-union conciliation board.

At this point, it should be emphasized again that nothing on this chart indicates anything artificial in organization. The attempts that are going on, so far as the chart expresses them, are attempts to strengthen and make saner and sounder the organization of untamed forces which do exist.

This point should equally be borne in mind in the relation of the shop-union council as depicted on the chart to those natural forces which exist in society at large in a more or less unorganized state; namely, consumers' control, whether private or public, the national and international labor unions and manufacturers' associations. These present day forces of social and industrial organization are in their turn more or less crude expressions of three underlying forces shown to us by social psychology, which will in all probability work out between them the society of the future. These three basic drifts appear to be:

1. The fundamental soundness of the principle of private property. This element takes into account the fact that it is a basic instinct of human nature for the indivdual to desire possession.

2. The force of state socialism. This force takes into consideration the fact that it is equally a basic instinct of human nature to desire to work out things in concert with one's fellows. An excellent example of state socialism at present in practice is the public school system.

3. The force of syndicalism. This force takes into consideration that basic instinct of human nature which leads us to desire to share in the control of the methods of production in which we are concerned and in distribution of the product. An excellent example of this instinct in present day practice is supplied by the whole field of professionalism as seen concretely in medical societies and bar associations.

Such a study as we have outlined here of the forces at work in the world and of our duty to attempt to organize them exactly as the student of electricity has organized that force, makes it the job of the industrial statesman to recognize first of all that there are facts of democracy as well as facts of efficiency, and to see to it, so far as it is humanly possible, that each group of facts is related to the other in organized and efficient ways.

Applied scientific management, then, which does not relate its science to the desires and to the thoughts of all connected with a concern in all their relations, either organized or in process of organizing, is not true to the Taylor principles.

Inasmuch as you have read and have with you for reference the advance abstract of my address, I propose to assume your knowledge of that and make this discussion[1] a development of the advance abstract.

I believe a society like the Society to Promote the Science of Management should have a planning department which should provide for adequate investigation of two great classes of problems which confront its individual members, whether proprietors, managers or management engineers. These two classes of problems are:

1. Those relating to the determination of the form of organization, the best way of performing an operation, etc., under a given set of conditions. These investigations must be conducted by competent persons and by the method of scientific experiment.

2. Those relating to the social, industrial and moral effects of putting into operation the organization or methods which scientific investigation has determined to be technically the best, and relating to the conditions, resulting from public opinion concerning industrial re-

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[1] **Stenographer's report of Mr. Valentine's address at the meeting Friday evening, December 10, 1915.**

lations, under which they shall be put into effect, and the machinery by which they shall be put into effect. Investigation of this class of problems cannot be conducted in the same manner as investigation of the other class of problems. It involves, for instance, a study of growing opinion concerning industrial democracy, the real meaning of property rights, the rights of labor and the functions of labor unions, whether labor is merely a commodity, and so on. It involves, further, an inquiry concerning what influence developing opinion on these and many other things should and undoubtedly will have on the individual's conduct of his business, including putting into effect the best technical methods he may have discovered. I believe every day many people are coming to believe, and, what is practically of great importance to you, labor believes (and has the power to make its beliefs receive due consideration), that the worker, individually and in organized groups, has a right to share in the determination whether and under what conditions new technical methods and apparatus shall be put into use. That is what I mean by the relation between efficiency and consent. I bring what help I can to your investigation of this second class of problems.

I wish to emphasize that, in investigating this second class of problems, your Society must not fail to study, and to ponder deeply, growing opinion concerning the rights and responsibilities of all persons, individually and in groups, who constitute industrial society. I take the liberty of suggesting the following specific subjects of inquiry.

1. The meaning of democracy; industrial democracy; class representation; ownership; property; efficiency; consent; etc.

2. Labor unions; their ideals and aims, and the positive good they have accomplished.

3. The meaning and significance of consumer's efficiency. The consumption of goods is not a minor thing whose function is to give you the occasion to produce. The fact is just the reverse: your part is secondary. You produce merely to meet the requirements of the important thing, consumption—welfare. The workman is not merely a tool of production, a means to an end. You and the workman together, as producers, are but means to an end, the end being the welfare of the workmen and yourselves as consumers. A producing organization is a consumer's agent. The efficiency of the workmen and yourselves as consumers is the important efficiency, and that efficiency is the basis of producer's efficiency.

Now labor unions think in terms of consumer's efficiency while managers think in terms of producer's efficiency. Their minds do not meet. The labor problem is primarily a problem of consumption, of distribution, rather than of production. Managers too frequently think of it as a problem of production.

4. The great mass of unorganized forces which are present in every industrial institution—forces the existence of which is not recognized by many managers because the forces are unorganized. These forces—the rights, the desires, the opinions, etc., of the workmen—surely exist in every plant, even though they are not organized. The wise manager should recognize and organize them and make them agencies of cooperation in the conduct of his plant. Instead he too frequently struggles, now with one, now with another, without perceiving this existence as a related whole. The struggle with one cannot be permanently terminated without taking all into consideration. In the chart on page 233 I attempted to suggest a machinery of contact between workmen and management which recognizes these forces and organizes and gives expression to them. This machinery is not an artificial inflexible thing. In any plant it would take a form determined by the combination of forces present. It would differ greatly in different industries, in different plants of the same industry and in a given plant at different times.

In studying this chart you should begin with the rectangle representing the factory, to the left of the page, nearly midway between top and bottom. Below you will find represented coordinate departments of the factory. The works, sales and financial departments are found in all business organizations. The personnel department, as a distinct functionalized department, is found in the exceptional plant only; and the Cooperative Association, in the form I have indicated—as a coordinate department made up of the whole personnel of the business—is a still rarer institution. This department gathers together, organizes and gives expression to the mass of unorganized forces to which I have referred—the rights, desires, opinions, etc., of the working forces.

The personnel department alone to my mind hardly gets at the heart of the problem; it does not get very far away from autocracy in industry. The cooperative department introduces a new and fundamental kind of democracy in industry.

In the personnel department on the chart you will find several subsidiary organizations such as the organization committee on which are representatives of the and feelings of unorganized labor. As organization begins to take any shape at all, it begins to crystallize into some form of a shop-union council wherein the interests of the factory and of the local and district unions are to some extent formally organized. In such forms of organizations as the garment trades, the shop union relationship has formally added to it the third relationship of the public.

The questions which come before such a shop-union council divide broadly into questions affecting the conditions of work and questions affecting pay. In the shop-union council's consideration of these questions, the findings of the determining boards and of the wage boards are before it so that here again the best available facts necessarily form the material of the discussion.

As to conditions of work, experience so far tends to show that all questions are arbitrable; namely, they are capable of being decided by an impartial third party on the basis of the facts presented.

Questions of pay, on the other hand, are still so unsupported by scientific basic facts as to be a matter of conciliation rather than of arbitration.

It will be seen in the chart that appeal lies from the shop arbitration board to either the shop-union arbitration board or the shop-union conciliation board.

At this point, it should be emphasized again that nothing on this chart indicates anything artificial in organization. The attempts that are going on, so far as the chart expresses them, are attempts to strengthen and make saner and sounder the organization of untamed forces which do exist.

This point should equally be borne in mind in the relation of the shop-union council as depicted on the chart to those natural forces which exist in society at large in a more or less unorganized state; namely, consumers' control, whether private or public, the national and international labor unions and manufacturers' associations. These present day forces of social and industrial organization are in their turn more or less crude expressions of three underlying forces shown to us by social psychology, which will in all probability work out between them the society of the future. These three basic drifts appear to be:

1. The fundamental soundness of the principle of private property. This element takes into account the fact that it is a basic instinct of human nature for the indivdual to desire possession.

2. The force of state socialism. This force takes into consideration the fact that it is equally a basic instinct of human nature to desire to work out things in concert with one's fellows. An excellent example of state socialism at present in practice is the public school system.

3. The force of syndicalism. This force takes into consideration that basic instinct of human nature which leads us to desire to share in the control of the methods of production in which we are concerned and in distribution of the product. An excellent example of this instinct in present day practice is supplied by the whole field of professionalism as seen concretely in medical societies and bar associations.

Such a study as we have outlined here of the forces at work in the world and of our duty to attempt to organize them exactly as the student of electricity has organized that force, makes it the job of the industrial statesman to recognize first of all that there are facts of democracy as well as facts of efficiency, and to see to it, so far as it is humanly possible, that each group of facts is related to the other in organized and efficient ways.

Applied scientific management, then, which does not relate its science to the desires and to the thoughts of all connected with a concern in all their relations, either organized or in process of organizing, is not true to the Taylor principles.

Inasmuch as you have read and have with you for reference the advance abstract of my address, I propose to assume your knowledge of that and make this discussion[1] a development of the advance abstract.

I believe a society like the Society to Promote the Science of Management should have a planning department which should provide for adequate investigation of two great classes of problems which confront its individual members, whether proprietors, managers or management engineers. These two classes of problems are:

1. Those relating to the determination of the form of organization, the best way of performing an operation, etc., under a given set of conditions. These investigations must be conducted by competent persons and by the method of scientific experiment.

2. Those relating to the social, industrial and moral effects of putting into operation the organization or methods which scientific investigation has determined to be technically the best, and relating to the conditions, resulting from public opinion concerning industrial re-

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[1] Stenographer's report of Mr. Valentine's address at the meeting Friday evening, December 10, 1915.

lations, under which they shall be put into effect, and the machinery by which they shall be put into effect. Investigation of this class of problems cannot be conducted in the same manner as investigation of the other class of problems. It involves, for instance, a study of growing opinion concerning industrial democracy, the real meaning of property rights, the rights of labor and the functions of labor unions, whether labor is merely a commodity, and so on. It involves, further, an inquiry concerning what influence developing opinion on these and many other things should and undoubtedly will have on the individual's conduct of his business, including putting into effect the best technical methods he may have discovered. I believe every day many people are coming to believe, and, what is practically of great importance to you, labor believes (and has the power to make its beliefs receive due consideration), that the worker, individually and in organized groups, has a right to share in the determination whether and under what conditions new technical methods and apparatus shall be put into use. That is what I mean by the relation between efficiency and consent. I bring what help I can to your investigation of this second class of problems.

I wish to emphasize that, in investigating this second class of problems, your Society must not fail to study, and to ponder deeply, growing opinion concerning the rights and responsibilities of all persons, individually and in groups, who constitute industrial society. I take the liberty of suggesting the following specific subjects of inquiry.

1. The meaning of democracy; industrial democracy; class representation; ownership; property; efficiency; consent; etc.

2. Labor unions; their ideals and aims, and the positive good they have accomplished.

3. The meaning and significance of consumer's efficiency. The consumption of goods is not a minor thing whose function is to give you the occasion to produce. The fact is just the reverse: your part is secondary. You produce merely to meet the requirements of the important thing, consumption—welfare. The workman is not merely a tool of production, a means to an end. You and the workman together, as producers, are but means to an end, the end being the welfare of the workmen and yourselves as consumers. A producing organization is a consumer's agent. The efficiency of the workmen and yourselves as consumers is the important efficiency, and that efficiency is the basis of producer's efficiency.

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In the personnel department on the chart you will find several subsidiary organizations such as the organization committee on which are representatives of the

Cooperative Association. It is through such machinery as is represented by these committees that questions of the conduct of the business which affect the employee,—working conditions and methods, hours, wages, etc.—can be threshed out. If the research or experiment department has decided that a certain job should be done in a certain manner, it can go before a properly organized board who give their consent to it, so that when it comes to the work people, it goes through smoothly, more smoothly than if it were put up to them as an entirely fresh proposition. There will have been recognized their right to be consulted about, and to consent to, a proposition which affects them—which affects their consumers' as well as producers' efficiency.

5. All the subjects of investigation suggested above lead to the final and most important subject of investigation, the consent of the worker to that which affects him. I believe that the utilization of every production method or mechanism should be conditioned on the consent of those interested parties: (1) the management or owners, (2) the individual employee affected, (3) the group of employees directly or indirectly affected. I am not talking about the workman's consent to the experiments which determine the best method of doing a particular thing; I am talking about the workman's consent to putting that best method into use through him. In the laboratory it may have been demonstrated by anyone you choose that the new method is technically, as a production process, the most efficient; but has not the workman the right to a judgment whether it is most efficient from the viewpoint of his consumer's efficiency?

I go so far as to believe that the individual workman affected and organizations representing every group of workmen affected, within or without the plant, should give consent to the putting into effect of even the most minute new mechanisms or methods.

What is the importance of the study of the relation between efficiency and consent to the practical business man? To discover the industrial conditions of the application of a new method is as practical and important a matter as to discover the new method. Big ideas concerning industrial democracy—real industrial democracy—are in the air and are crystallizing. They are each year defining anew the conditions to industrial operations. The practical business man is he who marches with progress, and is not taken unawares by unforeseen conditions. There are two equally practical ways of keeping step with progress. One is by each day taking the best one finds and moulding and adding to or taking from and building on by small increments. But he who follows this method only usually lags considerably. The other is by continual analysis of the whole industrial environment in the search for signs of the direction of progress. He who does this anticipates his competitors, secures advantages and is the wiser and more practical man.

RESEARCH is essential to industrial progress. It promotes inventions; it protects against charlatanism. It means a willingness to accept what is good; a willingness to discard what is worthless. Research provides the basis for taking the next step in advance or shows that what seemed a basis is really unsound. In either case, research contributes to industrial progress.

In many cases, industry has recognized its need for research. It maintains close connection with university laboratories. It studies scientific papers. It sends students to the colleges. It even maintains its own research laboratories where impartial investigation is conducted by scientific men. In these ways, industry shows its appreciation of the fact that discovery is the basis of progress and that leadership requires an immediate connection with discoveries as they are made.

Research in personnel has, in some cases, been recognized to be as essential as research in chemistry. The problems of human engineering and of management require research. They cannot be solved by the dogmatic assertions of self-professed experts in human nature. They cannot be solved by intuition any more than the weight of a new element can be determined by guesswork. The problems arising in the field of industrial personnel must be approached from the point of view of research, of impartial investigation, if there is to be a sound basis for labor management. Any insight into the methods of scientific procedure inspires tolerance and open-mindeness. (Scott and Clothier, *Personnel Management*, pp. 485-6.)

THE FIELD OF PERSONNEL ADMINISTRATION

By Ordway Tead[1]

PERSONNEL administration may be defined as that branch of an administrative organization which is primarily concerned to enlist the energy, interest, and good will of all the workers in the organization to the end of forwarding the defined objects of that organization with the minimum of effort and friction and with due regard for the welfare of the workers.

There are several points in this definition which require amplification, if a concrete and adequate picture of the responsibilities and duties of this branch of administrative work is to be given. Emphasis is required upon the points: (1) that this work is *managerial* in character; (2) that it is concerned in concrete ways with certain activities directly affecting the workers; (3) that it assumes some approximate advance agreement and understanding as to the purpose of the enterprise in question; (4) that it further assumes some hypothesis as to what constitutes "welfare" for human beings in general and workers in particular.

First, as the definition indicates, personnel administration is not the peculiar adjunct of industrial or mercantile management. Broadly viewed, it is a vital half of the administration and management of *any* organization—wherever exists the relationship of director to directed, of manager to managed. There is in the conduct of every organization not only the aspect of process, technology, material, but there is also the aspect of human attention, interest, will, cooperation. The problems are by no means inseparable, and there is a wide hinterland where they intermingle closely. The fact that administration is not yet viewed in all types of organizations as embracing these two complimentary halves does not alter the fact. Implicitly every enterprise—be it hospital, bank, railroad, steamship, municipal department, university or what not—has two fundamentally distinct aspects to its directive problem. And in all organizations of any size (where there are more people and technical problems to look after than one executive can conveniently know and deal with) the failure to make special managerial provision for the work of personnel direction is bound to mean that the refinements are ignored in any endeavor to enlist the best efforts of the personnel.

In short, the problem of personnel administration is not solely industrial. It is *organizational,* which puts the occupation, theoretically at least, in a much sounder position as respects its inherent and widespread utility.

It is in industry, however, that the need of differentiating managerial duties has first been recognized. And the practical exigencies of large scale industry, more or less simultaneously with the reflections and studies of those interested in a science of administration, have in industry brought considerable activity in the establishment of managerial departments of personnel. The practical difficulty to date has been that while a number of corporations have seen the wisdom of functionalized management of human problems, they have in fact been slow to delegate to equipped executives adequate authority in the personnel field. They have set up employment offices and instituted safety and educational work, but they have all too often failed to specify a major executive in charge over *all* such activities. One reason for this has been that there have been relatively few executives fitted by special training to direct the multifarious activities now embraced under personnel administration. So that this department of administration still remains in most plants in the hands of the head executive, who determines and directs personnel policy as best he can, just as he does in respect to other major policies.

It is important to call attention to this discrepancy between the admittedly sound administrative theory which would place a trained personnel manager in the top councils of every organization of over two or three hundred workers, and the current practice of most enterprises where trained personnel workers are used but are not allowed any substantial voice in fixing fundamental policies. There is every reason to believe, however, that this situation will change as more and more people of executive calibre are specially equipped to handle the personnel work. And the number of companies large enough to use to advantage the services of such a person is constantly increasing. It is also true, of course, that in hundreds of plants where the management will not feel warranted in having a separate personnel executive, it will be invaluable to have the general executive as familiar as possible with personnel work, its technique and point of view.

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[1] New York School for Social Work. Co-author with H. C. Metcalf of "Personnel Administration: Its Principles and Practice"; author of "Instincts in Industry."

In the second place, it is gratifying to be able to state that there is now wide agreement as to the activities which come or should come under the executive control of a personnel department. In the last twenty years a variety of "movements" and forces have contributed their share to the building up of a broad platform of now indispensable personnel activities. Without going into historical antecedents, it is valuable to point out that personnel work comprises activities which were called to the attention of managers by the following movements: vocational guidance, safety-first, industrial medicine, corporation training, scientific management with its job analysis, standardization and systematization methods, trade unionism with its insistence on fair terms of employment and group negotiation, the welfare work movement, the shop committee movement, the army personnel testing developments, and no doubt others.

As a result, a good sized plant today recognizes from four to six or seven distinct branches of its personnel work and organizes accordingly. There is usually a division of employment, placement and follow-up, the division of health and safety, the division of training, the division of personnel research, the division of service work (restaurants, picnics, dramatics, savings and insurance funds), the division or function of adjustment, negotiation, determination of terms of employment.

The work of a personnel manager in industry or mercantile houses is to plan and suggest policies regarding activities in these several fields, to secure the intelligent adoption of his policies and methods by all concerned—managers, foremen and workers—to direct and coordinate the general conduct of all personnel activities. The extent to which he will himself engage in one or all of these divisions of work will depend largely on the size of his organization. But certainly, with the exception of the medical work, he should be able, if necessary, to handle the practical detail and routine of most personnel functions, such as hiring, training, foreman training, supervision of service work, and most important of all, the intelligent determination of fair terms of employment and standards of production by methods of scientific job analysis.[1]

Third, when one says that the personnel manager must enlist energy and good will in behalf of the purpose which the organization is created to serve, one must appreciate that in industry this problem of agreement upon the purpose is less easy than at first appears. If one says flatly that an enterprise is run *solely* for profit (and that is indeed the avowed fact regarding many enterprises), then one has to recognize that to enlist the workers in behalf of this purpose may prove a mammoth task, unless the workers are to become in some measure profit-sharers.

If, however, a less absolute position is taken, and it is agreed that an enterprise justifies itself fundamentally by its service to society in providing for wants, and that a reasonable profit is but the reward of risk, the source of new capital and the measure of the utility of the enterprise, and if finally the company is willing to keep its profits down to this "reasonable" point, it seems that such a company will be able to go before its workers with much greater likelihood of securing from them a genuine adherence to its purpose.

This consideration of a corporation's purpose is not made by way of digression. It is an integral part of the argument. For the peculiar task of the personnel manager is to secure cooperation, working unity, and an effective morale. Without this, production can never take place to best advantage. But a vigorous morale is a product of psychological forces, and is brought about primarily by a psychological condition—namely, one of confidence and understanding. And if the management has a purpose in conducting its enterprise in which the workers have no confidence, or which they do not understand, the hope of their concurrence in that purpose is remote. Hence the necessity for straight thinking and plain speaking on this point. And it is altogether significant that personnel administration is practically most effective today in those plants which have avowedly adopted the position that not profits alone, but quantity and quality of product, service to customers, and adequate regard for the health and happiness of the workers, are determining considerations.

This point should not be misunderstood. The writer is not saying that it is impossible to justify most personnel activities on a purely and narrowly construed profit basis; he believes that they do pay most decidedly, and that they have proved to be indispensable assets in many businesses. But it is further true that the kind of cooperation of all workers in an enterprise which is the finest flower of intelligent personnel work will not manifest itself in those plants where profits to stockholders are the sole criterion and preoccupation of the management and owners.

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[1] In "Personnel Administration: Its Principles and Practice," we have discussed in some detail the technical methods and procedures with which the personnel worker should be conversant.

In other words, the work of the personnel manager has this peculiarity which aligns it closely with professional work; it is concerned to bring into practical working adjustment from day to day the purpose of profit, of productivity and of regard for the personality and perpetuity of the workers. The manager of personnel is that member of the management especially concerned to see to it that in the conduct of industry the broader human considerations have play—have as much play as is consistent with the continuance of the business as a producing mechanism. He is in a sense a missionary—a missionary for the idea that profit alone does not justify industry, that regard for personality and for richness and fullness of life for the rank and file of the workers of society is a necessary concern of management, that industry justifies itself and contributes to life's happiness to the degree that necessary goods are produced with as little hardship as possible and are dispersed at as reasonable a price as possible.

The tendency is widespread to regard training for business management either in college courses or in graduate courses in a school of business administration as a necessary condition for the best executive achievement. If this is true of business administration as a whole, it is equally true of personnel administration. I should say that the ideal arrangement would be for the man who wants to make this work his career to take a "cultural" college course of four years and two years of graduate work in the usual business and personnel subjects, with the summer vacations devoted to a considerable amount of manual and other work which would give the student familiarity with industrial conditions.

The opportunity for advancement is considerable for a person who has been trained in the way suggested above and who has the requisite intelligence and personality; especially if the individual does not construe his personnel interests too narrowly, but has fitted himself in his training to be an executive in the fullest sense of the word, and not simply a personnel executive. There is no question, however, but that in the next few years an increasing number of companies will put first class people into positions of much authority over exclusively personnel problems, and admittedly there are not available today the people to fill these positions.

The financial return, like the opportunity for advancement, is limited only by the value which the individual can demonstrate that he has for the organization with which he is associated. The student just out of school entering this work will be lucky if he gets $2500 a year, but there is no reason why at the end of ten years the able man should not be earning from $5000 to $10,000 a year.

The qualifications of good health, strong and effective personality, and those indefinite assets like tact and ability to cooperate with others, are prime requisites. The person who is able to meet people well, to state himself clearly before others, to be scrupulously fair and honest in his dealings with people, who is sympathetic and direct, who can plan out a program and patiently see to its execution with the necessary modifications over a term of years, is the individual who in this field, as in most others, will be successful.

The satisfactions of this work will depend largely upon the equipment of the individual. If he has the proper combination of qualities, the satisfaction will be great which is to be obtained from seeing his plans developed into realities, of seeing a more liberal industrial policy gradually pervade a single organization. But the person who is to do personnel work must be willing to start with people and conditions as they are and take account of their limitations as he works with them. Personnel work is not for the Utopianist, or for the person who is completely at odds with the present industrial system, or for the person who is impatient and unsympathetic with the frailties of human nature. It is for the executive with a teaching sense, with a realization that the process of evolution is not a rapid one. The advantages which will at once appear to the student with a little imagination are that this work is actually and concretely contributing in some one corporation to the provision of right working conditions, and fair terms of employment for some hundreds or thousands of people; that it is eliminating waste and friction in industry; that it is increasing productivity and creating an object-lesson in the kind of management under which machine industry can remain or become safe and tolerable to human beings.

The disadvantages of adopting personnel work as a specialized profession include, first, the fact that so much missionary work has yet to be done to establish it as a distinct field of managerial effort; and, as a result, advancement both in responsibility and in pay are in many cases less than they should be. This, however, may be offset increasingly if personnel managers have been trained so that their specialization is not extreme and that they are able to function in either the production, selling or financial management as well. Growing also out of the fact that this type of work is not widely understood in industry, is the disadvantage that many companies which have simply made provision for special employment agents or training directors or medical departments, will think that they have personnel departments and that the men running these departments are personnel managers. The distinction in administrative authority and in training required between an employment clerk and a personnel manager should be clear in the light of the foregoing analysis. Sound theory and practice can develop so far ahead of the inclination of corporations to make use of them that the trained worker finds the application of his ideas in a given concern to be a slow, up-hill fight.

This is, however, not peculiar to personnel management. It is true of all phases of management in which scientific knowledge has outstripped the willingness or ability of executives to make use of it. It would of course be out of the question for any person to find congenial employment in this field who felt that the present system was so inherently and completely exploiting the worker that to be a party to the employer's side of the organization was to compromise his ethical sense. Personnel work will be congenial rather for that type of mind which realizes that present economic conditions are not due to the personal willfulness or malice of employers, but to the development of broad economic forces, within the grip and limits of which, more than we usually like to admit, we must all work. Personnel management is distinctly the meliorist's profession, the profession of the enlightened liberal who is willing to understand the complex interplay of economic and psychological forces, and work in a scientific spirit with things as he finds them in a direction which at least looks to be somewhat more just and happy for everyone than is the present condition.

It is difficult to say what the extent of personnel administration in actual organizations is today. The number of plants in which a distinct and titled personnel executive holds a major administrative post is admittedly few. The number of plants in which personnel workers hold advisory positions which are influential, and administer a variety of personnel functions, would probably include nearly 200 more. There are beyond that a large number of plants, mercantile and industrial, which have special employment managers, training directors, or subordinate executives on some special phase of personnel work without any one coordinating staff personnel executive. We know, however, that there are over 5,000 plants in this country each employing over 2,000 workers, and with the expanding industrial activity which will inevitably come in this country in the next twenty years, most of these 5,000 plants should find a place for an executive well up in the administrative structure, who will get ahead to the extent that he has personnel training. Although the field is thus limited, there is almost endless room for the advancement of executives who combine general executive ability with some knowledge and appreciation of the importance of personnel activities.

WRITES one of our member executives to another: "Where an industry has achieved the position of being classified as 'scientifically managed' there seems automatically to develop a spirit of service. . . . I know from our own experience that our organization is imbued with a spirit of helpfulness, that it takes pride in giving detailed information where it is desired, and that the more a person wishes to know about our system and methods, the more eager our men are to serve. I find in your plant exactly the same spirit. . . .

"I wonder if this is a universal attribute of scientifically managed industries? . . . In my own experience I have yet to meet a single exception. . . ."

GENERAL ACCOUNTING AS RELATED TO PRODUCTION CONTROL[1]

By PERCY STOTENBUR[2]

THIS subject being very broad and the conditions in different industries varying greatly, I realize that the figures presented here and some of the methods which we use will not be generally applicable; however, any company having an inventory will no doubt meet the problems which are discussed here.

I think the subject can best be treated if I outline briefly the system by which the accounting department obtains information pertaining to production, and then explain how we try to use this information.

Production means not only producing product but producing equipment with which to make the product. This of course affects the plant and development accounts; in fact production affects most of the accounts on the balance sheet.

The largest account and the most difficult to control is Merchandise Inventory. I shall therefore tell you briefly how our system enables us to know the value of this account each month. We all perhaps use what is called a perpetual inventory. Starting January 1 each year with the physical inventory we proceed as follows:

Debits are made to the Stores account through purchases which are classified and recorded on the invoice register. The total of each class is charged to the account monthly. The Finished Parts account is debited with parts sent to stock from the shop. Credits are made to the accounts by requisition when the material is issued to work accounts or expense account.

Work in Process accounts are debited with labor which is accumulated by the distribution of the payroll, with material which is requisitioned from stock and with the prevailing standard burden. Credits are made to this account when the work is finished and sent to stock, or is otherwise disposed of, as through shipments or plant accounts.

The details of these transactions are handled by the cost department and given to the accounting department in totals at the end of the month. They are then posted on the control sheets, thus establishing the new balances.

The sub-divisions which we use in the inventory account are as follows:

Stores—Castings, Rolled Steel, Electrical Apparatus, Miscellaneous Materials, Finished Parts, Supplies, Tools and Scrap.

Work in Process—Machine Shop, Structural Shop, Hoist Assembling Shop, Crane Assembling Shop, Development Work and Plant Improvement.

Development costs are those which are necessary previous to the manufacture of the product to put the product on a profitable manufacturing basis. These include drafting and engineering, jigs, tools, patterns, etc. These costs are accumulated in the same manner that product costs are, and could either be capitalized and eventually charged to the product on a pro-rata basis or else charged off each month as they occur. We use the latter method.

Plant improvement costs are handled the same as development costs with the exception that they are capitalized and depreciated each month on a predetermined percentage basis.

I do not feel that it is necessary to go any further into the details of these methods inasmuch as most all accountants are familiar with them, and even though they may not be using them they are probably getting ready to do so.

Now comes the hard problem. We have a balance sheet and an income-expense statement which reflect the production and activities of the factory. How shall we read them? Are they good or bad? We may have made a good profit on paper, but are we able to realize that profit in cold cash? Is our inventory too high or too low? Have we invested too much in plant and equipment? Have we spent too much on development and will it pay for itself? Have we produced more than we have shipped and why? These are some of the questions we must ask ourselves.

I read an article sometime ago in one of our trade magazines which impressed me very much. It was in the form of a novel and the ratios may have been fictitious, but the principles were correct. The general manager had apparently been opposed by the directors with respect to his ideas on how to manage the factory, until the financial aspect of the company looked very bad. Apparently the other directors were not well posted upon sound financing and therefore were not aware of the crisis they faced. The general manager had prepared facts and figures showing the condition and his plans for remedying the trouble. His analysis of the balance sheet showed the following results:

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[1] Paper presented at a meeting of the Southern Tier Section (New York), Elmira, N. Y., Nov. 14, 1923.

[2] Auditor and accountant, Shepard Electric Crane & Hoist Co., Montour Falls, N. Y.

We have $.10 in cash for each $1.00 of liabilities; we should have $.25.

Our surplus is only 3.3 per cent of our liabilities.

Our ratio of inventory to assets is as high as 42 per cent.

Our payables and bonds are as high as 41 per cent of our liabilities.

Our ratio of sales to inventory is only 1.6 to 1.

I did not find out how he solved his problem because that was in the next installment, but from the above facts it seemed to me that the inventory was the cause of the whole trouble. They probably carried an inventory which was twice as high as it should have been, thus tying up cash and increasing accounts payable and bonds, and reducing the earnings on their investment.

A general idea as to the amount of money which should be tied up in inventory may be obtained by roughly calculating the inventory turnover. This is obtained by dividing the cost of stores purchased, produced and shipped per year by the average inventory balance.

Let us assume that, on an average, we replenish active finished part stock every six months, and that each month we use on contracts parts averaging $75,000 in cost. We must assume that we should have three months' supply on hand at all times to maintain a six months' supply, some parts being entirely used and some not used at all. Our inventory then should be 3 x 75,000 or 225,000, representing a turnover of four times. If it is greater than that we assume that we must have some inactive or dead stock or else quantities in excess of requirements. It is very desirable to establish if possible the economical quantities to run in each lot. The larger the lots the smaller the cost per unit, because of set-ups on machines and increasing speed of the operators as the work becomes more familiar to them. But there is a limit to the quantities which may be run because of the limitation of machine capacity to cover the entire line, and the interest in the investment exceeding the saving in cost. By referring to the cost records, calculating on one hand the saving by increased quantities and on the other the interest on the investment, a standard size lot may be obtained. These standards may have to be decreased or increased with the trend of business.

The stock records should be gone over periodically to ascertain whether any stock is obsolete. If so, we should scrap it if we have no use for it; however, if we may at times have a call for it on repair orders or for use in supplying a duplicate of an obsolete model, we may keep the stock on hand in the obsolete section of the stock room; but we must be sure to inventory it at scrap value. A reserve should be set up monthly to take care of such losses as it should not all come out of our profit at the end of the year. The effect that this method has on our federal taxes is well worth the effort. We should not give full value at any time to parts which we do not have any hopes of disposing of at a profit.

Great care must be used by the stores department to keep stock in balance. We may have a normal inventory in terms of cost, but if we are not in balance, production is slowed up and eventually the inventory is forced up. These errors in judgment show up very readily in the general accounts either by increased inventory or decreased shipments. It may be advisable during a depression to build up the finished parts inventory and reduce raw material inventory, so that when good business is resumed we shall be able to make quick deliveries. Another direct saving from this method comes from saving in our overhead. During curtailed production the burden rate goes up, and if standard burden rates are being used the difference between standard and actual represents a loss which at times becomes very large. This abnormal burden is a cost which we watch very carefully. Details of the burden are checked monthly with a budget based upon the ratio of each account to the production payroll. In this way glaring defects can readily be found and remedied.

The stores department is given each month the Stores and In Process balances and is thereby enabled better to control stock.

If it were not for our perpetual inventory we should be at a loss to know how our inventory is running until the end of the year. But then it is too late.

The two evils which must be avoided are over- and underproduction. If we become too economical we may decrease the size of our lots to such an extent that the cost per unit becomes objectionable, and if we greatly increase the size of our lots we tie up money, the interest on which eats up in time the profits we have made by increased production. In addition to this we may have to re-value our inventory on a falling market and lose a large proportion of the profits we have made. During and just after the war very large inventories were built up, partly because of increased costs and partly because of overproduction. When the depression came late in 1920 many thousands of dollars were lost in this way, some of which was entirely avoidable. Enormous taxes were paid on these book profits during the war period; no provision was made in the tax law allowing us to set up a reserve to guard against this inevitable loss, and those who were unable to decrease their inventory to a reasonable amount before the depression came found that they had not realized these profits at all but had paid taxes on them.

Considering again the inventory turnover, we find that various kinds of stock have entirely different turnovers. Castings, for instance, are never purchased much in advance of requirements; hence we expect a turnover of twelve times a year.

Shop supplies and fuel usually have a very rapid turnover.

Small purchased tools have a very slow turnover. This, with us, is due to the many kinds and sizes required to be in stock at all times. Our turnover is only about once every two years.

Electric motors have a rather slow turnover in that we have to stock up so many sizes, all of which are necessary to cover the different current, voltage, phase and cycle conditions.

Structural steel has a fluctuating turnover inasmuch as we try to purchase large stocks of this at favorable prices when business is dull. Deliveries are also usually very long, thus requiring us to predict as far ahead as possible and place our orders accordingly.

It may be well to use an example showing the economies effected by increasing the turnover on inventory. Let us assume that because of poor management the inventory represents $500,000. The net worth represents $700,000; the average inventory turnover is two times per year.

By careful management we are able to increase the turnover to three times. We reduce the investment in inventory one third, or $167,000. The saving in interest cost at 6 per cent would amount to $10,020, or 1.43 per cent of the net worth. In addition to this our liabilities are lower, there is less risk during a decline in business and we save insurance and floor space.

Large inventories tie up cash, increase accounts payable and bank borrowing, and reduce earnings on investment.

The working capital ratio, more commonly known as the ratio of current assets to current liabilities should be at least two to one. We try to keep our ratio as near three to one as possible. If we can keep a three to one ratio and still keep our inventory in proper balance, we feel we are doing very well.

The same set of accounts excluding inventory should be at least one to one. This ratio may be called the quick asset ratio; it allows one to pay off all immediate liabilities with cash on hand or quickly obtainable, providing the ratio is maintained above one to one. This ratio is checked very carefully by bankers from whom we borrow money.

The working capital ratio may be at least two to one, and may appear to be all right, but by applying the quick asset ratio we may find that a great deal of money is tied up in inventory which is subject to market conditions. If business is bad it is not a liquid asset because there is no way of rapidly turning it into cash, and much of it requires extra capital to transfer it from raw to finished stock.

The Income-Expense statement should show of course how much profit we obtain from our operations, how much it costs to produce the product in the factory, how much it costs to sell it, etc.

The profits should be considered not only on a basis of a percentage of sales but on a percentage of net worth or capital stock. It is possible to make a profit of 15 per cent on sales and yet the profit may not be sufficient to pay regular dividends on capital stock. It is also possible to make a very small percentage of profits on sales and yet earn a large percentage of profit on net worth or capital stock. Take as an example Swift & Company. Over a period of years they made a profit of only 1.7 per cent on sales, but based on net worth it amounted to 8.6 per cent. This is all due to the relation of sales to net worth.

Profits should also be analyzed to see if any line or size of product is unprofitable, thus calling for readjustments in selling price, or if that is impossible a discontinuance of unprofitable lines.

Some consideration should also be given to the ratio of net sales for the year to the total assets or investment, and to the fixed property. By keeping down the investments and increasing the sales, very satisfactory results will be obtained from the standpoint of returns to the stockholders.

How much of the earnings shall we leave in the business and how much shall we give to the stockholders in the form of dividends? Some earnings should be retained in the business to provide for expansion and some also to provide for the time when business is bad and we are losing money. Some industries make it a rule to try to keep at least 50 per cent in the business.

The accounts receivable turnover varies greatly with industries because of the length of time allowed for payments. I should imagine the installment plan houses have a very long turnover period. This turnover is calculated by dividing the average sales per day into the average accounts receivable, giving a result in days. If we expect our customers to pay in thirty days then we should expect a thirty-day turnover. If we are not getting it some customers must be stalling on their payments; perhaps we have some bad debts; perhaps a poor collector.

Two very important factors affecting production are the unfilled orders and the proper balance of these orders. If a decline in sales occurs it may effect all or only part of the factory, and the same is true of an increase. Good judgment has to be used in endeavoring to obtain a proper distribution of work throughout the factory. It may be possible that a great increase may occur in the sale of one kind of product, affecting one department, which will tax that department to or beyond the limit in production; yet the total orders may not be increased and possibly they may be decreased.

Delivery dates on prospective jobs have to be readjusted and salesmen instructed on which kind of product to concentrate. Shop forces may also have to be readjusted.

Our recent plans relative to plant expenditures have been to purchase, if necessary, not to exceed an amount equal to the amount which we charge off as depreciation. Of course in case of necessary expansion because of permanently increased business, a carefully laid out schedule should be used. We have recently established a budget for development expenditures which we consider reasonable, and I think I may say that an amount not to exceed 2 per cent of the sale price of the product shipped per month is not excessive in lines like our own.

In conclusion, I should like to say that if possible it is very desirable to arrive at certain ratios which from your experience or the experiences of others have proved to be proper for each classification of assets and liabilities on the balance sheet. This is a complex problem and one which has not been treated very much in text books. One book, however, has been published very recently which may be of interest to us—Bliss, "Financial and Operating Ratios in Management," The Ronald Press.

I shall give you a few ratios taken from this book based upon eight years history of the electrical machinery manufacturers. These have been compared with our own history and we find the comparison very gratifying to us.

Ratio of Important Balance Sheet Accounts to the Total (Year 1921 *only).*

Current assets	60%	Current liabilities	14%
Property	21%	Long term borrowing	17%
		Net worth	66%
	81%		97%

Working capital ratio, 3.18.
Percentage of earnings left in the business, 52.5.
Inventory turnover (Sale price of shipping cost inventory), 2.67 times.
Accounts receivable turnover, 85 days.
Dollar of sales per dollar of total assets, $.85.
Dollar of sales per dollar of fixed property, $4.55.
Net profit on sales, 8.3%.
Net profit on net worth, 12.5%.

I have endeavored merely to point out to you some of the accounting problems pertaining to production. These problems can not be discussed in great detail in a brief time. I may have brought out points of interest to some of you; if so let me hear how you handle these problems yourself.

NATIONAL AND SECTION MEETINGS

January 11	Central New York Section, Syracuse. Subject: Continuity of Employment—a Case Presentation.
January 24-26	The Society, New York City. Subject: The Development and Influence of Scientific Management during the Past Decade.
January 28	Cleveland Section. Subject: Distribution—a Governing Influence on Production.

For details see pages 245-7.

THE NEXT MEETING

New York, January 24-26

THE next meeting of the Society will be held in the Engineering Societies Building, New York, January 24 to 26. Members should set aside these dates for participation in the meeting.

Arrangements have been made for an interesting and instructive program: The following papers will be presented and discussed:

Types of Management: Unsystematized, Systematized and Scientific, by H. P. Kendall, Boston. At the Tuck School Conference of 1911 Mr. Kendall presented a paper under this title which stands as a classic; the new paper will present the observations and conclusions of twelve years later.

The Positive Contributions of Scientific Management, by Henry H. Farquhar, of the Harvard Graduate School of Business Administration. A noteworthy paper under this title was published by Mr. Farquhar in the Quarterly Journal of Economics in May, 1919; the new paper will present observations and conclusions based on recent investigations.

Scientific Management and General Administrative Control, by John H. Williams, New York. The earlier applications of scientific management were to control of processing; later applications have included other phases of management, including the function of coordinating the major functions of selling, finance and production. Mr. Williams' paper will review the influence of scientific management principles on the practice of the general management.

Scientific Management in Selling and Advertising, by Wm. S. Groom and Stuart Cowan, of the J. Walter Thompson Company, Chicago and Cleveland offices. Under the conditions of a buyer's, or at least an uncertain market, general managers and sales managers feel a new and greater interest in the application of scientific management principles and methods to marketing problems. This paper will present to us examples of this trend in management with facts indicating the progress which is being made and the results which are being obtained.

Personnel Work in Scientific Management, by Mary Gilson, The Joseph & Feiss Company, Cleveland. Notwithstanding the fact that historically the first functionalized personnel work was established by Taylor at Midvale back in the early 1880s, many people have been led to believe that the human aspect of management has been neglected by scientific management. This paper will show that the human relations aspect of management has always been a principal concern of scientific management—and that during the recent depression it was the scientific management plants which did *not* participate in the wholesale junking of personnel work, because it has been made by them an integral part of the general management work.

Scientific Management in Federal, State and Municipal Business, by Morris L. Cooke, Philadelphia. The management of the public business is the last stronghold of resistance of the traditional and inefficient in management. To what extent has it been influenced by the scientific management ideals? Perhaps to a greater extent than we are aware of. This paper will review the facts.

Scientific Management in Other Countries than the United States, by Frank B. and Lillian M. Gilbreth, Montclair, N. J. It is said that the interest in scientific management in the countries of western and central Europe and in Japan is more general than in the United States. To what extent have those countries been influenced by these ideals? To what extent has that influence manifested itself in practice? What is the tendency? What will be the influence on competition with the United States? Mr. Gilbreth's numerous trips to Europe have enabled him to observe conditions and tendencies and give a reasoned account of his observations and conclusions.

It will be observed that the program is built about a central theme—the development and influence of scientific management during the past decade. The recent publication of Copley's life of Taylor has put on record the details of the origin and early stages of development of scientific management; the Tuck School Conference of 1911 put on record its status in 1911, up to which time it had been concerned principally with production; the meeting of the Taylor Society here announced is planned to put on record its status in 1923—to show how it has developed to include influence on general management and on the management of practically all departments of a business.

MAKE YOUR PLANS TO ATTEND

Set aside the dates—January 24-26.

Secure your hotel reservation.

Secure your railway reservation.

MAKE YOUR PREPARATIONS

NEWS OF THE SECTIONS

An Invitation from Cleveland—Boston Combines Meeting with Trip Through Jordan Marsh Company Store—Subjects of Meetings Show Wide Diversity of Interests—Ohio State University Student Branch Organizes for Year

THE Cleveland Section, announcing its program for the entire season, invites any member of the society who may be in that part of the country on any of the dates given to drop in at the meetings. All meetings are held Monday nights at 8:00 in the rooms of the Cleveland Engineering Society, Hotel Winton.

The theme around which the meetings center is selling—but each meeting's subject is treated not as an isolated unit but in its relation to other units which go to make up the whole with the idea that each meeting, whatever its topic, will be one of real interest to every member whatever, his specialty.

November 26.	*Production*—established by how and where an article is advertised
January 28.	*Distribution*—a governing influence on production
February 25.	*Planning*—maintenance of proper inventories, use of plant equipment and regular turnover of capital
March 24.	*Personnel Problems*—wage incentives
April 28.	*Scientifically Set Quotas*—their aid to manufacture and sales
May 26.	*Potential Growth of an Organization Using Scientific Methods*—a summary of the season's meetings.

Eighty people attended the first meeting at which Mr. William S. Groom of Cincinnati, Vice President of the J. Walter Thompson Company, presented a paper on "Coordination of Sales and Production Based on Analysis of Buying Groups and Advertising Circulation Values." Keppele Hall reports: "It was a very interesting thing to see what careful attention was paid by the audience to this discussion of Mr. Groom's on a subject with which most of them were unfamiliar but with which all are deeply concerned. Many of the people at the meeting called attention to the fact that the things that they care most to hear about are not details of how people are conducting their various manufacturing operations so much as general phases bearing on the relation which their job has to other jobs in industry. Originally it was thought that the local sections would devote themselves to details and leave matters of general interest to the national meetings, but the temper of the local members seems to be such that they want this general stuff at their local meetings too."

Mr. Groom's ideas on how scientific management can be applied in sales and advertising will be featured in the paper he is preparing with Stuart Cowan for the January meeting in New York.

The Cleveland Section expects to have Charles Douglas Mercer as speaker at its January meeting. His experience in sales problems and advertising with the *Saturday Evening Post,* the Eastern Manufacturing Company, Clinton Wire Cloth Company, Gorton Pew Fisheries Company, and H. H. Robertson Company makes him a splendid person to follow Mr. Groom.

The Central New York Section elected the following officers at its business meeting at the Chamber of Commerce of Syracuse, Friday, October 26: Percy S. Brown, chairman; I. E. Papworth, vice chairman; Robert J. Andersen, secretary and treasurer; Ralph M. Jones, L. B. Sawyer, Bruce Griffin and Andrew W. Seacord, members of executive committee.

"Can Wages be Based upon the Cost of Living" was the subject of a round table discussion following the business meeting. R. J. Andersen presented a paper and Vice-Chairman Papworth led the discussion.

The section is planning a big meeting for January 11, featuring a case presentation of "Continuity of Employment."

The paper by Percy Stotenbur on "General Accounting as Related to Production Control" read at the last meeting of the Southern Tier Section of the Taylor Society at Elmira, New York, November 12, 1923, is printed in full elsewhere in this Bulletin. A lively discussion followed, led by Mr. A. D. Bowman, accountant of the Corona Typewriter Company, Inc., of Groton, New York.

At the October meeting Mr. Hathaway of Philadelphia was expected to talk on "Standards in regard to Factory Management," but was unable to be present. Mr. Benedict, the Chairman, read the paper on "Standards" written by Mr. Hathaway and previously read before a meeting of the parent society, and the lecture was illustrated by slides. A very interesting round table discussion followed, participated in by many members.

The December meeting will discuss "Cost Accounting as Related to Production Control."

The New England Section has had three very successful meetings this fall, the first of which was held October 25 during Management Week in cooperation with the other Management and Engineering Societies of the District. At that meeting President Stratton of Massachusetts Institute of Technology presided; Professor Roe of New York University delivered a paper on The "Measurement of Management"; Mr. J. P. Jordan, President of the National Association of Cost Accountants, spoke on the "Operation of Management"; and Mr. W. I. Bullard, Vice-President of the Merchants National Bank, spoke on "Management from the Banker's Point of View." The meeting was one of the largest that this group has ever held.

The second meeting was of an entirely different nature and brought to the fore one of the most interesting and significant developments in the field of management. It was a very important meeting to those interested in the application of the principles of Scientific Management to different types of work and industries. The meeting was held in the Avon Street Annex of the Jordan Marsh Company and the subject was "The Application of Engineering Methods in a Department Store."

The Jordan Marsh Company through its Planning Department, has made some very unique studies of the application of management principles to the non-selling departments, including wrapping, packing, office work, personnel and service activities. Mr. W. A. Hawkins, a Director of the Company, gave an entertaining address of welcome and explained how the Company decided to apply Taylor principles to their concern. Mr. Hawkins was followed by Mr. Walter M. Stone, Office Manager, who outlined the principles as they were applied to the organization. Mr. Merrill W. Osgood, Operating Manager, then gave a detailed account of the development work. He told in detail how standardization and time study were applied to various operations within the non-selling end of the organization.

Before the meeting an opportunity was given to all members and visitors present to inspect the work of the non-selling departments. The meeting as a whole was very well organized and conducted, and the Jordan Marsh Company cooperated very highly in supplying guides and instructors for the visiting members. On the whole this was probably the most interesting and important meeting that this section has ever had.

The third meeting of the year was called as a noon luncheon at the City Club, Tuesday, November 27. Mr. Richard A. Feiss, President of the Taylor Society, was the main and only speaker. Mr. Feiss took up in considerable detail the continuing of the membership campaign of this vicinity, and then delivered an address on the application of Mr. Taylor's original cost classification to the development of functional organization, explaining in detail how this was worked out in The Joseph & Feiss Company of Cleveland.

A joint luncheon meeting of the New York Section of the Taylor Society, the New York Chapter of the Society of Industrial Engineers, and the Management Section of the American Society of Mechanical Engineers, was held Friday noon, December 7, in the Cafe Boulevard—too late for detailed report in this Bulletin.

Mr. Louis F. Musel, of Henry L. Doherty and Company, spoke on "The Philosophy of Budgeting."

The Student Branch of Ohio State University, Charles S. Pearce, President, holds a luncheon meeting the third Mondoy of each month. Mr. Franklin J. Kunze of the American Multigraph Company is announced as speaker for a special meeting December 13.

The following report of the Management Week program of Columbus, Ohio, of which advance notice appeared in the October Bulletin, comes from R. E. Lyons, Secretary of the University Committee on Extension:

"Columbus, and vicinity carried out the Management Week program this year with much enthusiasm and no little measure of success. The week's program took on added significance because of the additional feature of three-day continuous sessions held at the University. These meetings were in addition to the luncheon meetings of Columbus business men, devoted without exception during the week to discussions of management questions.

"The University's share in the program was the outcome of an effort to interest business executives in central Ohio in a more extensive discussion of management problems under the leadership of such men as Mr. Wallace Clark of New York; Mr. Keppele Hall, The Joseph & Feiss Co., Cleveland; Mr. Chas. B. Williams, of the firm of Nau, Rusk & Swearingen, Cleveland; and Mr. Wm. S. Groom, J. Walter Thompson Co., Cincinnati. These sessions continued for two and three days and were devoted to the subjects of 'Production Control,' 'Industrial Costs,' and 'Market Analysis.'

"Those who participated in the discussion of these meetings endorsed the plan most highly and considered that their attendance was unusually profitable. Reports of the discussions are to be published in the near future and made available to Ohio business men and others interested."

REVIEWS

How to Think in Business. By Matthew Thompson McClure, McGraw-Hill Book Company, Inc., New York, 1923, pp. x, 173.

The late Mr. DeBoer, president of the National Life Insurance Company, of Vermont, used to tell us that, when asked the best course of self training for business, he recommended a study of Mill's *Logic*. He held the conduct of business to consist of the solution of a sequence of problems and the best training for business to consist of training in logical thinking. The increasing emphasis on the problem and case methods of instruction in schools of business administration suggests that they too are coming to hold much the same point of view, but without recognition of the value of problem solving in the light of a comprehension of formulated principles and procedure of right thinking.

Professor McClure's book is well designed to give the reader who is unacquainted with philosophical literature a working knowledge of the principles and procedure of sound thinking. It is a small book—only some 40,000 words—but it is comprehensive; it is written in a simple, non-technical style which is easily understood, but it does not on that account forfeit substantiality of content. And to the reviewer its point of view is most acceptable, being that of John Dewey's *How We Think* and *Human Nature and Conduct*. It cannot fail to be very profitable reading not only to the young but to the mature man in business. It might well serve, in schools of business administration, as the text of a short introductory course to all courses involving the problem and case methods of instruction.

There is in this book much of pedagogic value to those concerned with teaching and with the development of a curriculum. If thinking be problem solving then should not all courses be problem or case courses and all the teaching in a course be by the problem or case method? But note what the author says: "Once the problem is properly placed in a fruitful context, it more or less solves itself. The really difficult thing is to know what contacts and analogies and principles to select as basal points of reference. . . . 'A good stock of major premises is necessary, a good stock of rules and principles acquired in previous experience; without some knowledge of a subject, you have only vague generalities to draw upon, and your reasoning process will be slow and probably lead only to indefinite conclusions' . . . . A given problem is settled in the light of wider experience. From this it follows that deduction implies a previous stock and fund of information. Your previous experience is your capital. In solving problems you draw upon it. If you have no funds to draw upon, you will soon go into intellectual bankruptcy."

The last two words of the title of the book suggest an ingenuousness (apparently commercial) which is unpleasant. The principles and procedure of good thinking are the same wherever there is thinking—the same in business, in the hospital, in the pulpit, in the court room. There is no special method of thinking for business, as this book itself proves. The three or four illustrations drawn from the field of business are not sufficient to warrant the title as it stands. It is simply an excellent little book on how to think.

H. S. Person.

Applied Personnel Procedure. By Frank E. Weakley, McGraw-Hill Book Company, Inc., New York, 1923, pp. vii, 192.

Considered as an account of the actual personnel procedure in a particular plant, Mr. Weakley's book on "Applied Personnel Procedure" is a valuable contribution to personnel literature. It describes in concrete detail the organization, methods, practices and records of a personnel department, including such functions as selection, training, promotion and welfare of the employees. General applied personnel procedure can only be worked out from the cumulative experiences of many plants which are willing to make public their methods and results.

The book, however, loses somewhat when it attempts to generalize largely from the experiences of one plant. In the present stage of experiment so many of the principles and practices of personnel work are still moot questions, that the successful application of certain forms of procedure in one plant does not necessarily mean that they are the most suitable to all others. An example is the much debated question as to who should have final authority in hiring. In assuming the practices in the one plant as standard, the book becomes less valuable to the novice in personnel work who may accept these generalizations as final. Similarly, the different degrees of emphasis which different plants place upon special functions, due to local conditions and interests, limits the experiences of one plant as an example for the general field. For example, employee representation, which is barely touched upon in this book, is an important function in some plants.

It would have been interesting if the author had pointed out how the personnel department had been successfully "sold" to the minor executives and department heads as well as the workers in this plant. It is a rock upon which many a well-planned personnel department with the best intentions has split and where guidance in the light of experience is much needed.

Louise C. Odencrantz.[1]

STANDARDIZATION IN GERMANY

(*Continued from page 224*)

case in this country. The largest of these firms devotes about half of its time to standardization work, employing a staff of over forty. They have as their clients trade associations as well as individual firms, the latter including both large and small companies.

One of their clients is the trade association representing the motor vehicle industry. In this work they perform many of the services that would be done by an ordinary headquarters standardization staff.

Of the companies which are their clients, some maintain their own standards bureaus, which take care of the greater part of the detailed work, leaving to the consulting firm only the more important and difficult questions. In other cases, the consulting firm does a large amount of the detailed work.

Another most interesting development is the work of consulting engineers on trade catalogs for companies. This is particularly significant, as it is carrying standardization a step farther than is usual, by introducing it into the sales organization and sales policy. In this, careful consideration is given to the question of limiting the number of types, ranges and sizes offered for sale, placing proper emphasis in the catalog on these particular items on which the company wishes to concentrate, and, in general, in featuring and often advertising the relation of the firm's products to the standardization movement.

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[1] Labor Manager, Smith and Kaufman, Inc., New York City.

OBJECTS OF THE SOCIETY

(Extract from the Constitution)

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure an understanding and intelligent direction of the principles governing organized effort for the accomplishment of industrial and other social purposes for the common benefit of

   A. The Community
   B. Labor
   C. The Manager
   D. The Employer

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptation and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, labor, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective social responsibility.

MEMBERSHIP

Members are elected by the Board of Directors. Application must be made on a form which may be secured of the Managing Director. There are five classes of members:

1. Honorary Member: Elected for distinguished service in the promotion of the science of management.
2. Senior Member: Thirty years of age or over; connected with organization, management or management engineering, as one in responsible charge of installing methods, as executive, as social scientist, or as teacher. (Initiation fee, $15; Annual dues, $15.)
3. Associate Member: Twenty-five years of age or over; interested in cooperating in the work of the Society toward the advancement of the science of management. (Initiation fee, $15; Annual dues, $15.)
4. Junior Member: Twenty-one years of age and not over thirty; experienced in subordinate functions of management or management engineering or graduate of a school of engineering, business administration or commerce of collegiate rank. (Initiation fee, $5; Annual dues, $5.)
5. Sustaining Member: Individual, firm, corporation or organization so interested in the advancement of the science of management as to wish to promote the work of the Society by annual contribution; privileged to designate two individuals who shall be entitled to all the rights and privileges of members (including receipt of the Bulletin) except to vote and to hold office. (Dues, $35.)

A MANAGEMENT ENGINEERS' CREED

The sublimest duty of the engineer is to keep the faith:

The faith of the client that he will not undertake what he knows to be beyond his ability; and that with respect to what he undertakes he will give conscientious service to the limit of his ability;

The faith of his fellow engineers that he will remain true to his science and will magnify and not cheapen it; and that he will base his efforts for public recognition upon ability, scientific attainment and actual performance, and not upon ambiguous self-laudation;

The faith of the community that he will undertake no service inconsistent with the public welfare; and that in service consistent with the public welfare, but in which the interests of groups appear to come in conflict, he will judge carefully and sympathetically the claims of rival interests, and attempt to establish that unity of purpose which promotes the public welfare.

LBAp'24